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Hurd, P.

1952 - 1953

Alaska

Journal: 1952
[insect sampling, notes, counts]

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plant notes

Species Accounts: 1952
[incl. stomach contents]

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Sampling Notes

June 21 Dragged tundra pools behind ARL building - 10 ft drag with plankton net yielded predominantly Copepods + at most 5 chironomid (red) larvae. This method used also on ridge plot area with same results except chironomids turned out to be a small grayish rascal with approximately 20 turning up in 10 ft drag.
In a 12"×12"×1" mud sample from edge of tundra pool behind ARL got 236 red chironomid larvae - these are preserved no other animal life noted by this sampling method

June 23 Exploratory samples of tundra pools on ridge showed same levels of chironomid larvae. Plankton net dragging in pools behind ARL yielded 2 lepidoptera like larvae =tipulids
a bottom sample near edge of pool showed 1 red chironomid larvae, 10 earthworms 2 beetle like larvae. This sample consisted mostly of moss-like material and a few grass stems - size of sample 12"×12"×1" + from under 2" of water.

June 26 Examined funnel traps that had been set behind ARL in the tundra pools in chiefly Carex vegetation, Traps had been set on 24th near edge of pools in

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Sampling Notes

June 26 4" or less of water – results: 1) 1 Dytiscid Ad, 30 earthworms; ± 15 chironomid larvae; 1 spider. 2) 1 Dytiscid Ad; 20 chironomid larvae (red + small white ones, former predominating); 10 earthworms. 3) 18 earthworm 5 chironomid larvae. A 1/4 meter plot of grass topped polygon behind ARL yielded at surface area 3 Ad Carabids + 2 carabid larvae.

June 28 In tundra pools on grid plot behind A.R.L. the large red chironomid larvae are in evidence especially near margins of pools under about 1" to 1½" of water. Collembola are present in large numbers in certain of the pools – many diptera larvae – especially chironomids, and probably Ephydrids are along margins of pools and in damp situations. A couple of adult chironomids were noted on the surface of one of the pools.

June 30 On pebbly bottomed + banked pools the Eretmoptera-like (strap winged chironomid) are out in large numbers – many of the visible ones are males, but upon turning the pebbles over in moist areas females can be found + some in locked copula with the males – by contrast with the numbers of males they (♀♀) are rarer. A few

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Sampling notes

June 30 adult chironomids are present as are also a large number of larvae - some encased in their mud tubes - some already in pupal state. The Bunting pair have been deriving the majority of their food from the shore of the pebbly pool near the Bunting 24 hr watch area.

July 2 Out on the sampling plots on the ridge the overcast condition seemed to depress insect activity on the adult level - even so on the slopes of polygons and along the edges of tundra pools there were a large number of anthomyiid and Ephydrid adults - probably 1 or more per linear foot of polygon slope or pool edge. Certain of the pools had large numbers of collembola on their surfaces and some spiders were in evidence in & around the pools in addition to be present on the tundra itself. Many buttercups, R. nivalis in bloom and a short series of an unidentified Ephydrid-like fly were taken from the floral heads and microscopic exam showed plain evidence of pollen grains adhering to their body surfaces. The 1st blooming Pedicularis noted. Tundra pools are drying up and vegetation is becoming

pollination

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Sampling notes

July 2 – green. A few Fungivorids were observed about moist areas around intermediate type of polygon slopes. Longspurs were feeding in frost scar polygon meter plot and adjacent slopes of these polygons + others. On absence of stomach analysis it appears the principal food they are getting is spiders and some flies, probably anthomyiids + Ephydrids. On one of the tundra pools whose bottom is covered with sphagnum the strap-winged Chironomid (Eretmoptera like) were taken + alcoholed. Greatest Longspur pop observed in this area of the ridge was about the polygons of intermediate + frost scar meter plots none observed in marsh area meter plot. Probably 7-10 birds were about the area during the afternoon – mostly males + feeding consistently.

July 3 – Cl int + very warm (130°F) in afternoon – Around A.R.L. – many midges of 2 species present and Buntings were observed capturing these on wing. Surface of average tundra pool (6' diameter) contained about 10-15 midges on surface others around the edges of pool (± 20) and those with pebbly bottoms had the Eretmoptera-like midges present in about 3-5 per 10 cm²

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Sampling notes

July 3 of shore area - additional specimens under the pebbles - probably 3 to 10 per cm^2
an exploratory excursion out to ridge west of ridge plot area in afternoon showed a remarkable increase of midges on wing especially the large pectinate antennaed males (see collection) Many Tenthredinids on high polygons covered with Willow growth with ± 5 per sq. meter. Old lemming burrows with rotting vegetative matter near entrances yielded 10-20 Tipulid adults per burrow opening. A few, 1 or less per sq. meter, Fungivorids (= Mycetophilids) were observed. Occasionally a specimen of Scopeuma vulpinum was flushed and it flew skyward at 10 to 30 feet height. Others were observed flying over-head. First Queen bumblebees captured and additional ones noted - but not caught. In an area of approximately 1 sq. acre 10 queens were noted - some examining old lemming burrows - in 2½ hrs of observation
2 more Noctuid (s.l.) pupal cases picked up on high polygons and were brought in for rearing. Longspurs apparently were feeding on Tenthredinid adults and some were probably taking anthomyiid

moths

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Sampling Notes

July 3 . + Ephydrid adults — these averaged about 1 or 2 per sq. meter. Beetle activity not observed in any of the localities. 1 immature Mirid found in willow area.

July 4

Exploratory sampling on willow ridge produced on the average per sq meter 10 Ephydrid flies 1 spider; 3 ichneumonids; 1 Tenthredinid and less than 1 fungivorid per sq. meter. A few longspurs were feeding in this situation probably not more than 10 per acre for the portion of the ridge under consideration. Principal floral composition is: Salix 3 spp and in other areas adjacent to willow areas is Petasites. Small flocks 3-6 of the Pectoral Sandpiper also feed in the area metered. Observed 3 Bombus queens and 2 moths similar to ones being reared in lab. 3 more cocoons were found on high centered polygon blisters in Petasites area. Several cocoons from which the moths had emerged were also seen.
Around ARL many midges were observed in flight, resting on the vegetation and also on ponds. Morning was fairly warm some say as high as 56 F – sampling was done in afternoon on willow ridge.

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Sampling Notes

July 5. Meter plot area in grid of ridge. Insect activity generally increased over last time especially with regard to adults. Many more Ephydrids + anthomyids active as well as such diptera a mycetophilids, Cecidomyids and spiders. Spiders seem to be more diversified in numbers of spp and found under almost any situation examined including pool surfaces and their waters. A few Chironomids observed in flights over pools but quantitatively negligible perhaps greater activity would have taken place were the sun out.

Observed red-tailed Bombus sitting on flower of Petasites apparently after both nectar and pollen. Similar situation observed in a patch of Pedicularis. More and more ephydrids noted in floral heads of Ranunculus nivalis and working near base of petals for nectar. In this process they become covered with pollen and in many of the flies examined around Ranunculus nivalis patches the body of a fly is covered with a fine yellow bloom - the pollen of the buttercups. Captured a queen Vespula which was flying over the open tundra. 2 "Noctuids" observed in flight over the ridge area. Considerable sawfly activity observed wherever there are any number of willows - otherwise only 1 or 2 noted in several square meters of open tundra area

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Sampling Notes

July 5 Around tundra pools and marshy areas or anywhere there is considerable amounts of standing water the adult midges are in great evidence both on the wing and resting either on vegetation or surface of the pools. In meter plot area not so many in evidence probably owing to the lack of large amounts of standing water. Longspur pair that was around the frost scar polygon appeared to be eating flies (esp. Ephydrids + Anthomyids + spiders). A single male was observed to visit one of the cans away from those at each meter plot and feed upon the accumulating spiders + possibly Collembola

July 6 Out the Point-Nuwuk. Investigated Bunting feeding sites for food they were carrying to young. Discovered that principal food source at least for several pairs was at edge (shore) of Elson Lagoon. Here were very large numbers of the Eretmoptera-like chironomids ±100 per ~~one~~-quarter of sq. meter also about 1 carabid per sq. meter and an occasional Saldid (=)
+ probably not in diet of the Bunting. (For additional data see stomach analysis of birds taken this date at the Nuwuk pt. Some Buntings were observed feeding in the low willow mounds + apparently taking snowflies,

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July 6 Sampling notes

ichneumonoids, and Ephydrids. Meter count gave 6 snowflies, 2 ichneumonids, 11 Ephydrids.

Exploratory work on willow ridge showed essentially the same per meter count as at the point except the addition of 1 fungivorid adult per meter. 2 Bombus were observed at flowers of Pedicularis, probably solely after nectar as scopal hairs showed no pollen. These bees both queens were the only visitors to the Pedicularis patch during 1½ hours of observation.

July 7 Most of day overcast with occasional rain sun shone intermittently in the morning + early afternoon. Most obvious insect about the Bunting area behind + adjacent to ARL was the large "red" Chironomid adults - these in small swarms around the tundra ponds and adjacent areas. Towards evening ±7pm + on until 11 00 pm no wind was blowing and large swarms of them were very conspicuous - anywhere from 3 per c^3m up to several hundred per cubic meter. Most of them are males but the emergence is not over yet. There has been a gradual but steepening increase in their numbers since July 3. Bunting this evening were gathering large mouth

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July 7

Sampling Notes

gulls for their young - many of which are rapidly reaching the stage of leaving the nest. Other midges of small size were swarming but not so conspicuous or in such abundant numbers as the large midge. Surface of many tundra pools especially ones around ARL were on their shore edges covered with the cast pupal skins of these large midges. Some pools apparently have not had the midges start emerging while others have had a great number come off - at least judging by the pupal skins.

Exploratory work continued on the ridge and at willow ridge area a marked increase in number of surface insects took place in spite of the short duration of sunshine owing to the overcast. Average meter count in willow growth gave 15 ichneumonids; 10 sawflies. 8 diptera - mostly Ephydrids, 5 spiders - count made in 15 minute intervals. In Petasites type of meter plots got average of 15 diptera - mostly Ephydrids; 10 spiders; and 1 ichneumon or sawfly - count 15 minute intervals; in marsh area 10 spiders, ±50 midges in flight across plot during count of 15 minutes. At Pedicularis sito

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July 7 Sampling Notes

Observations were made for 45 minutes running from 3:30 pm to 4:15 p.m. 4 *Bombus* queens visited this area during the observation period 3 during the 1st 15 minutes + 2 landed on flowers apparently for nectar - other 1 in 1st 15 minute period flew over but failed to stop - all these were "black tailed *Bombus* queens During 2d 15 minute period 1 *Bombus* queen of "red-tailed type flew over but didn't stop last 15 minute period no *Bombus* observed.

July 8 Ridge meter plots

Sampling results may be somewhat lower than actual since it was overcast this afternoon with a strong southerly wind + sun was obscured during much of the operation. This is particularly true in the case of the Tenthredinids + ichneumonids (Hymenoptera) since they are most active during sunshine. Even so, there was a noticeable increase, generally, in insect life per sq. meter. Between 1:30 pm + 3:45 pm 4 "red-tailed specimens of *Bombus* were observed to visit flowers of *Petasites frigidus* and apparently were more after nectar than anything though their hairs upon examination (esp. body hairs) had pollen grains much in evidence. During the past 24 hr

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July 8 Sampling Notes

watch of Longspur nest 4 Bombus were observed to fly past the blind area at the following hours: 0745; 1937; 2210; and [illegible]. see [illegible]

Heavy emergence of midges around ARL continued today, especially of the large one and a higher percentage of females were noticed than previous days. Swarms accumulated towards evening — no wind & very little at this time. Female and some male Buntings were observed carrying large mouthfuls of the large Adult "Red" midges to the young.

July 9 Overcast most of day with rain in the morning sun broke through around noon, but became overcast again by 1:30. Wind blew fairly consistently up until 5:30. Meter plot sampling on ridge this afternoon showed mostly diptera only 2 Hymenoptera taken a sawfly and one ichneumon. Composition of diptera fauna on the plot area was largely midges (Chironomids) Fungivorids and a few Tipulids. Average e.g. meter count in *Petasites* area was in a 15 minute count 21 midges, 11 Fungivorids and 1 Ephydrid & less than one per meter, but were *Empidids*, Anthomyids, Tipulids and Spiders (depressed owing to weather ?). In Petasites-Willow area Fungivorids 17, midges 12, Cecidomyids 6. In intermediate or semi marsh like

Weather during count overcast with strong southerly wind sun came out a few times & then briefly

Meter Plot No. 1 (Frost Scar)

Date July 8, 1952

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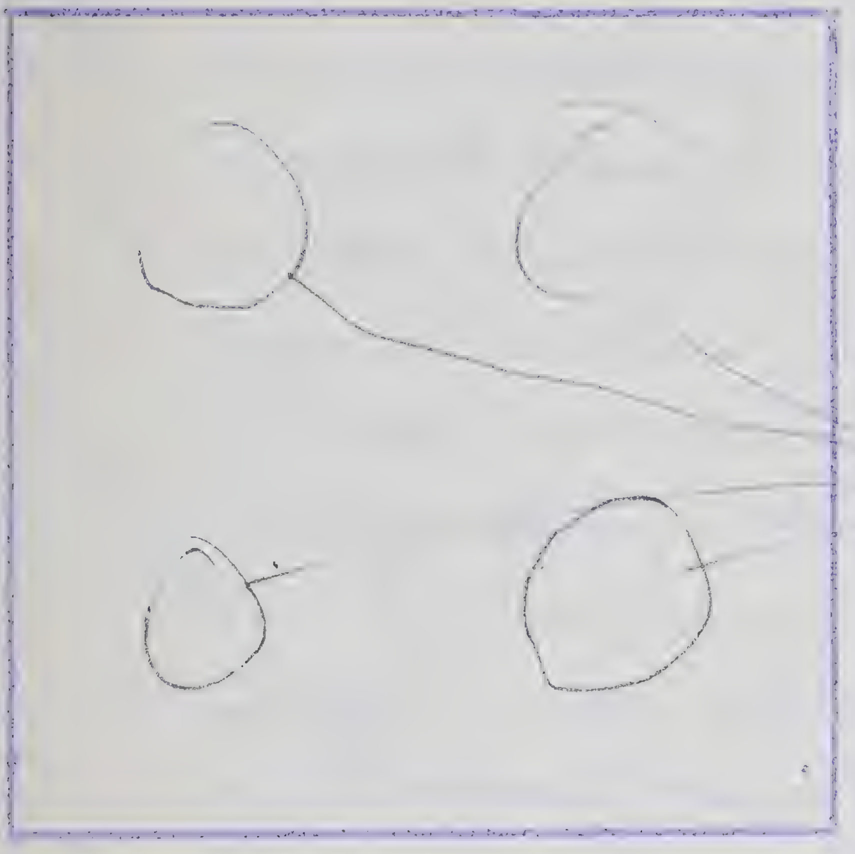

At a replicate can obtained 8 Tipulid adults 7 spiders 1 Chrysomela subsulcata Ad. & 1 pupae;

Small humps in which most of diptera taken intervening areas w/ spiders staphs & collembola.

Can count: 1 Fungivorid; 1 Cecidomyid ; 3 Staphylinids; 12 spiders ±50 collembola

Surface fauna: 1 Tachinid, 15 Fungivorids ; 5 Ephydrids; 7 spiders. 1 cecidomyid. Replicates gave quantitatively the same levels except no more Tachinids this replaced with 1 anthomyid in 3 out of 5 replicates. Chrysomela subsulcata approximated 1 per 4 x 5 sq meters and then only in Petasites area. Hymenoptera probably repressed owing to poor sun light.

Berlese sample: 7 mm of collembola & mites in vial 8 X 90 mm – saved

7

Vegetation notes: Petasites flowers open wide – at adjacent polygons a few "red-tailed" Bombus visiting flowers.

Remarks: Longipus actively feeding in this polygon

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July 9

Sampling Notes

areas — midges ran as high as ±100 in a 15 minute count to as low as 25 per sq meter in same time interval. Some Ephydrids and Coccids noted but in general fauna seemed markedly depressed as contrasted with yesterday. Marsh areas had ±200 to ±500 midges per sq. meter per 15 minutes. Longspurs were absent in this situation but in foregoing ones present and were taking a high percentage of the midges.

Today the midge species composition became greater with the appearance of many more species and in more areas their presence was noted than previously. Towards late afternoon 3-5 they began to gather in groups as the wind abated and perform their "dance".

Several (7) Bombus spp were seen in flight over Petasites areas and apparently were not visiting the flowers which appear to have reached a peak in their bloom. Many more Papaver are out as Cochlearia and some Saxifrages. Coming out of old lemming holes are many Tipulids (small sp.) and some of the smaller midges as well as a few Fungivorids and Muscoids. Many of the smaller tundra pools are dried up exposing the Sphagnum moss bottoms from which protrude a

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Sampling Notes

July 9 number (± 4) tipulid pupal cases. Lo ever where there is any water standing large clouds of midges may be observed unless the wind is blowing quite strongly.

July 10 Rained most of the day - no field work.

July 11 Meter plots on ridge - afternoon. Clear with a few scattered clouds almost uninterrupted sunshine all afternoon, slight wind and relatively warm. Most obvious change in the insect fauna since last visit was the great upswing in the numbers of midges and muscoid flies. Large swarms of midges hovered here and there over much of the study area and as the afternoon wore on the individual swarm size increased. Many rested on vegetation especially around pond margins & on the exposed bottoms (sphagnum) of drying pools. Others were encountered in almost any moist (where you can't kneel without getting wet) places. An orange winged base Muscoid was out in fairly large numbers + hovered in the air in "mating flights" near transverse ditch across ridge. Others of this same species were found on the ground and some sitting on flowers of Petasites. In certain moist areas - especially those occasioned by depressions of weasel tracks were Syrphids (Helophila) buzzing

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July 11

in over the damp vegetation - mating flights?
1st Saldids discovered on tundra this date as
also 1st Caribou flies (Oedemagena tarandi)
2 females of which were captured as they
alighted on my clothing. Tipulid fauna
much more conspicuous than last visit, but
not in large numbers. For the 1st time mosquitoes
Aedes sp. nr. communis have been found
at the Pt. Barrow region. These (♀♀) pestered
me during most of the afternoon as well as
certain biting midges (Heleids) and bites
were inflicted about my face, neck + arms.
Ten Bombus queens of at least 2 species +
possibly 3 were observed in the Petasites
frigidus gathering pollen which formed large
pollen masses on their scopa. 8 of these were
taken and with much greater facility than
previous specimens - apparently the pollen
gathering "slows" them down. Very few other
Hymenoptera were noted about the plot area
but a brief visit to willow covered hummocks
showed their presence to be somewhat increased
over previous visits - mostly Ichneumonids -
tenthredinids + in that order. The 1st Ad Trichoptera
was taken on the ridge area in flight.
Surface collembola are not anywhere near
as observable as earlier in the season.

one not [illegible]

Weather during count: clear slight wind, relatively warm

Sample plot no.: 1 (frost scar)

Date: July 11, 1952

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Traps

1) 3 Dytiscid larvae; 3 spiders 1 dytiscid Ad.

2) 1 dytiscid larva

3) empty water level below funnel openings

Traps moved this site.

had 1/2" water from last nights rain

Can count: 3 *Chrysomela subsulcata*. 7 Tipulids; 11 spiders, ± 20 collembola; ± 50 midges (rain soaked); + 3 Saldids

Surface fauna: Cecidomyids ± 30; fungivorids ± 5; *Chrysomela subsulcata* 1; Muscoid flies 20; 1 Tenthredinid. Chironomids staphylinids 3; 6 spiders; & mosquitoes + ceratopogonids flying in + out of plot during 15 minute count at around ± 100, Tipulids 2.

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Berlese sample: 7mm of collembola + mites in 8 X 90 mm vial. 12 hr Berlese sample saved - 1 anemicule looks a Protura - worth looking at.

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Vegetation notes: *Petasites* full bloom with *Bombus* occasionally visiting & carrying loads of pollen

Remarks: many tundra pools in this area dried up + with great swarms of midges - a few Tipulids

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July 12

Day afield - cloudy + threatening most of morning - cleared off in afternoon. Spent morning in exploration sampling in m. ter plot area. As contrasted with yesterday afternoon insects in general depressed in activity except midges + mosquitoes (Aedes sp. nr. communis) - they much in evidence in morning and became increasingly pestiferous as the day wore on - as did also the biting midges (Heleids). Many swarms of midges in evidence most of the day and particularly so in the marsh areas. Many midges observed in the vegetation and on the ground. Muscoids in evidence but not too active. The syrphid Helophilus sp. was encountered in the AM but only occasionally. More cecids evident in the ground and also the small Tachinid - like fly around owl pellets + dead remains of birds - the Borborid was much in evidence. Only 2 Bombus were seen in the AM. Tipulids are becoming more + more frequently seen elements of the tundra. Afternoon tramped around the soggy marsh potting at ♂ Eiders but didn't get anything. Found 2 of the 3 nests of the Steller's Eider. No exploratory insect work done in the afternoon - mosquitoes very pestiferous!

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July 13

clear all day with cold breeze. Spent afternoon out on willow ridge working primarily in Petasites area. Most conspicuous in ground base large numbers of Fungevorids ± 30 per meter in 15 minute counts also ± 10 cecidomyids & ±15 Muscoids. Other incidentals include tenthredinids ichneumonids, Tipulids, staphylinids and chrysomelids. Midges were not near so abundant in the vegetation on this portion of ridge — I believe the cold breeze pretty much quieted their activities. They were in evidence in large numbers about tundra pools. Only 1 Bombus ♀ was seen all afternoon on the large Petasites area & was gathering pollen.

July 14 Rained a good deal of morning — insect life behind ARL not too noticeable during this period — 30 birds came into traps at first run — decided increase over previous runs

afternoon spent out on the meter plots on ridge. Weather: was overcast with a biting cold wind coming off ocean ice which is breaking up and moving Northward along the coast. No midges or mosquitoes were seen in flights. Tipulid population up but those observed were walking across vegetation. Cecidomyids and anthomyiid populations also seemed increase in spite of weather. Mites walking over exposed soil surfaces were noted for

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July 14

first time. Only 1 Longspur was noted feeding in the meter plot area - it flew over to sundan can + ate up the rain soaked glop (Tipulids, Fungivorids, spiders et al) I dumped out earlier in afternoon. 1 *Bombus* queen visited the *Petasites* flowers at meter plot #1 within first few moments of count, but excluded since replicates failed to show any *Bombus* today or any other day.

July 15 → afternoon out 2 mi E of ARL - shot Red Phalaropes for stomach analysis results of which see elsewhere. In general they contained mostly Chironomid adults probably about to emerge from pupae as they were mostly males of a green species not yet seen in flight in the marshy areas. These birds were shot in *Arctophila* ponds. Next on list were Tipulids + many eggs with them some of these crane flies appeared to be pupal also.

July 16 Spent afternoon out on ridge in exploratory sampling. Floral picture changing rapidly. Most conspicuous are the *Petasites* patches which cover large expanses of the ridge and approaching full bloom in the top part of ridge + adjacent high polygons. Other lower areas largely S NW + N are rapidly

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July 16

coming into bloom with expansive areas of Petasites. Ranunculus nivalis is rapidly going past full bloom and many areas the flowers are shriveling, but in lower regions particularly along the eastern fringe of the ridge at its base they are now in full bloom. The Willows on the ridge have completed their bloom & the catkins are drying up. All but a couple of plants of Pedicularis have gone past bloom and are becoming quite dry. Potentilla is still in good bloom and has not shown signs as yet of drying. Papaver radicatum is coming out now in full bloom on the higher and somewhat more gravelly drier areas. 1st flowers of Cassiope tetragona are out on central portion of ridge in a Petasites frigida (predominantly) area.

Sampling consisted of willow meter plot replicates which revealed ±15 ichneumonids, ±5 Tenthredinids, ±10 Muscoids, ±3 fungivorids ±2 Tipulids and ±5 miscellaneous diptera (midges, Cecids,) per sq. meter. An occasional spider was seen but only in the more moister & grass interspersed willow regions. Many midges (including 1st of the green chironomid) showed up in most areas visited outside of willow areas in fairly large numbers except for the green midge which I think is just coming out except Red Phalarope

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July 16

stomach analysis of July 15th. Bombus was in evidence but not in great numbers - In a little over 4 hrs of observation 15 Bombus queens observed only 3 of which were on flowers - these were all Petasites frigida - 1 with a pollen load + 2 without - apparently in quest of nectar. The other Bombus queens observed were ~~[illegible]~~ in flight over Petasites areas. One was observed apparently searching for a nest around old lemming burrows. This was first noticed on last Saturday. Longspurs observed mainly in Petasites areas and appeared to be feeding largely on Muscoid flies + midges. These birds are beginning to group more and more into nomadic wandering bands and are to be seen most commonly on the ridge. The breeding pair with their 5 young on the ridge seem to be consuming largely the midges which are blown up from the marshy areas or else from the tundra pools. Most of the latter are dried up - at least those with the sphagnum moss bottoms - a few pools which I judge to be permanent lack the completely sphagnum moss bottoms and are generally about 10-20 cm in depth near the middle. The flightless short winged Eretmoptera-like midges midges are still in evidence about the gravelly man made water filled ditches. A few Syrphids were encountered on the ridge

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July 17

Meter plots on grid this morning from 10-12. In spite of southwesterly wind mosquitoes were pestiferous. Counts in general reflected an increase over last trip in spite of overcast condition. In afternoon continued sampling but in willow area along old road line. Here many willows were noted in bloom and on below line the Buttercups (R. nivalis) in full bloom. Insects life here ran very high quantitatively especially one sp of Cecid? which were ±100 per sq. meter on average. Other elements were Fungivorids ±25 per sq. meter; Muscids ±20 per sq meter; Ephydrids ±15 per sq. meter; Ichneumons ±5 per sq. meter, Tipulids ±3 per sq meter; Tenthredinids ±1 per sq. meter. Spiders ran about 10 per sq. meter - all counts 15 minute duration. Mosquitoes became increasingly abundant as we left area at 3. Midges were frequently encountered here in willow mats, but most of which blown into infg. from adjacent marsh, and average ±15 per sq. meter. Another green midge encountered today. Bombus queens observed flying about Laboratory area about 8 am - some observed in afternoon. In evening we visited marsh area and found midges abundantly in

July 17 flight, mosquitoes were much in evidence and were still in flight and pest forms as late as 10:00 am. On reaching the owl nest which contains 2 young several mosquitoes (all most likely Aedes communis or sp. near) were observed sucking blood from the owlets and persisted about the nest during our visit. On visiting Jaeger nest with their downy black young no mosquitoes were observed about the young. Midges were still in evidence upon leaving the marsh area around 10:00 pm. It is possible that the mosquitoes may be breeding in the Arctophila marsh ponds.

July 18 Clear bright and warm morning with a slight SW wind. Mosquitoes behind ARL in fairly large numbers and very pestiferous particularly around 1100 – 12 noon. Large numbers landed on ourselves while additional numbers swarmed about us.

July 19 Rained off and on today. This afternoon visited the ridge + areas beyond but did no collecting. Mosquitoes were still in evidence and at times quite bothersome. On visiting the Snowy owl nest mosquitoes were again observed to be drawing blood from the young owlets.

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July 20.

Meter plots on ridge this afternoon - overcast with easterly wind. Longspurs in groups of 5-10 especially around polygons of high relief and transverse ditch sections across the ridge. These man made ditches ± 3 feet deep and about 5-6' wide still contain some water in depths up to 1' and many midges and Muscoid flies seem to congregate about their banks as do also Tipulids. Though no sampling has been done on these banks - especially those adjacent to the water it appears at least superficially that the pop. levels are higher - concentration? In spite of the overcast conditions + rain of previous evening + early morning hours insects were in usual abundance. A walking sweep over approximately 1 mile of tundra on ridge mostly over high polygons + intervening low and even marshy areas revealed presence of great numbers of midges and Muscoid flies. Tipulids both of the 2 "wingless" female species were in evidence about 1 or 2 per sq. meter of high polygon type. Males were not quite so abundant, but can counts indicate that their level is about equal to females. Fungivorids seem to be lower - at least in actual count on meter plots + general observation but may be not so active on this type of day

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July 20

Mosquito activity was sufficiently great this morning around ARL environs that it was necessary to utilize 612 to insure some relief. Out on ridge this afternoon their activity around me was not too noticeable except when wind decreased in velocity towards 5 pm. Only 2 _Bombus_ were noted all afternoon - 1 in flight over the ridge and 1 taken on _Petasites_ gathering pollen at 5 pm. Many of the "wingless" female Tipulids were observed in high polygons between the little _Petasites_ humps of these polygons to be ovipositing. Dissection of these revealed the black elongate eggs found in stomach analyses. Ephydrid activity seemed way down though this may be more apparent than real. A pupa of _Chrysomela_ _subsulcata_ was dug up in a _Petasites_ _clump_ and was not more than 1/2" below surface level. It was a bright orange in color. Floral conditions pretty much same except a red dock? (   ) has become quite noticeable since July 17 as has also the _Senecio_. _Papaver_ remains as on the 18th very conspicuous in the willow dominated sections of the ridge. _Cassiope_ is becoming more & more abundant. _Petasites_ continues to be the dominant flowering plant. _Isolated patches_ of _Pedicularis_ and _Cochlearia_

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July 20 - are still evident. Ranunculus nivalis is rapidly disappearing except on those areas where the last snow lingered also the same with R. pygmaeus. The Eriophorum is becoming more and more evident over large expanses especially in the marsh area adjacent to the ridge. The grasses & sedges are becoming very noticeably greener.

July 21 Rained most of day off & on. Visiting field in afternoon on ridge showed most insects not active; however Tipulids were walking through vegetation & Longspurs eating them.

July 22 Day in laboratory - cloudy & rained off and on

July 23 Day overcast except for a fleeting glimpse of sun this afternoon. Spent afternoon on ridge at meter plots. All counts down appreciably and it appears cold spell has killed off many of the midges. Some of the tipulids appear to be dying many have badly frayed wings and others are scarcely able to navigate (martini's?) muscoids much less common. Only Ephydrids observed were those around old trash-line of ridge in willow areas. No bumble bee activity noted. Petasites is beginning to decrease and many of the Saxifragas are beginning to bloom. Here & there a willow can be ~~pollinated~~ found in bloom.

Hurd
1952

Pt. Barrow, Alaska
Hurd

July 24 Day spent around lab - bird trapping - very cold no insects noted on wing behind ARL

July 25 Overcast with light SW wind much warmer today than yesterday at 0900 behind ARL in sampling grid a few midges in flight (all ♂♂'s & similar to the early July ones in appearance) also a few Aedes were noted during the course of my trips over the grid.

July 26 meter plots on ridge. Overcast most of time - intermittent sunshine & quite cold. No Longspurs noted during sampling work (1pm - 4:30pm). Muscid flies appear to be most conspicuous element of insect fauna on basis of meter plot replication. Crane flies - especially the vestigial winged female species still in fair abundance (± 1 per meter sq). NO Bombus observed. Chironomids still at low level although on Arctophila filled ponds & marsh to west of ridge plots green sp in fair numbers resting on vegetation. Also in this situation are the adult Trichoptera also resting on Arctophila stems along edges of these ponds. Several other spp of Chironomids especially small species skirting about the water surface near pond edges.

Hurd
1952

Pt. Barrow, Alaska

July 27. A great flight of chironomids (similar to species flying in July 7) occurred this a.m. around tundra ponds behind ARL. It did not approach the earlier July flight in total numbers, but was quite noticeable. Did some exploratory work in Arctophila pond to the west of ridge plots. Green midge species is out in fair numbers none observed in flight but many specimens were collected on Arctophila grass stems along with a small black & white-banded leg species as well as a very small sp. No birds observed around the pond or adjacent area. Also a great many adult Trichoptera are on the Arctophila stems & leaves apparently possess very poor powers of flight as they just drop to the water surface when disturbed.

July 28 Day in the lab - rained off & on built bird traps

July 29 Meter plots on ridge light snow falling during most of afternoon. Insects largely inactive except for 2 Bombus queens which were gathering pollen from Petasites right in the snow. Vegetation very wet. midges resting on it with heads pointed downward. The Muscoid flies were out and somewhat active in the falling snow. At the Arctophila pond the Trichoptera were resting on the stems of

HURD
1952

Pt Barrow, Alaska

July 29. the arctophile. midges were not in evidence and couldn't be located even in the cracks of the ground. On the plot area most of the Petasites is well past about bloom - many have already dehisced. The Petasites between the polygons is now beginning to bloom.

July 30 around ARL & traps good weather noticeably warmer - sun came out for several hours this afternoon - midges flying about in large numbers up to 50 per cubic meter, d'ir at any given glance. Mosquitoes in evidence but not encountered in numbers over 3 or 4 at any one time. Midge swarms formed in afternoon & early evening.

July 31 This a.m. the midges behind ARL in evidence already, sizeable swarms had formed - many resting on the ground & vegetation also. A few Mosquitoes were about. - Sun shining through thin clouds occasional obscured behind large cloud masses, this continued on out into afternoon & evening. Out on the marsh there were a very large number of mosquitoes & very pestiferous - still no indication of their breeding. as soon as wind would blow and sun obscured they drop off very rapidly - also dip in temperature had the effect

Hurd
1952

Pt. Barrow, Alask.

August 1

afternoon on the ridge at meter plot area; overcast with sun off + on increasing cloudiness towards 5 pm. No tipulids observed even though there was a few dead ones in the sunken cans. Exploratory searches failed to demonstrate any all afternoon. Muscoids now are the dominant large insect per sq. meter on polygon regions + even in the marsh to the E of the sampling area. A few midges noted during census work but not in significant numbers. Large numbers of mosquitoes all females were most pestiferous during the counts and were in greatest abundance since sampling began more probably because I was lying on ground in a day the temperature was right for their activities devilish as they are. Population of chrysomela subsulcata about same but more larvae encountered only 1 adult seen. In pulling rather dry moss apart on top of high blister near found dipterous pupae and returned these to laboratory for rearing. Saw 2 Bombus queens in flight as well as one of the moths I saw earlier. No fungivorids encountered in all the sampling work - a couple were swept from flowers of Papaver along with muscoids

August 1

which are apparently the chief pollenators of this plant. Other muscoid flies of apparently same species (?unmated wing species) were also visiting flowers of Potentilla and Senecio. There were a large number of ichneumonids were about the Petasites area mostly in the small size some apparently hyperparasites. 1 orange species taken & resembles the one I raised earlier in the season from a larva of Chrysomela subsulcata. No longspurs noted in immediate area but some were heard further up the ridge towards ARL - at Wilimovsky Pass - also taken at that spot were some specimens see crop analysis sheet.

Around ARL there were flying in tremendous numbers late this afternoon & evening before the rain ~~~~ ~~many~~ midges; many were scared up by the weasel.

August 2 overcast with rain good part of day but was fairly warm as midges were flying around ARL in the Pass - spent day on the banding grid. Small groups of Baird & 1 Semipalmated Sandpipers gathering about pools in banding grid & probing for insect larva (presumably chironomids).

August 3 Fog - mist - rain most of day with very high N wind spent day on banding grid.

Hurd
1952

Pt. Barrow, Alaska

august 4

Clear with cold east wind. out on ridge. Very similar to last visit (august 1st as far as species composition & relative quantitative picture of fauna. Ichneumonoids appearing in increasingly larger numbers, particularly the vestigial winged one which was taken in Petasites regions of high polygons, their grassy interstices and along old beach line in willow areas. Greatest density of the ichneumonoids was in the willow areas. about the blossoms of the Papaver are many muscoid flies & these are the principal pollinators of the poppy although some other fly groups - Bombyliids (1 or 2 seen all afternoon), chironomids (perhaps 1 per 20 flowers) and Mycetophilids 1 per 50 flowers were observed. A male Bombus was taken from a staminate flower of Petasites 2 others seen in flight. 1 vestigial-winged Tipulid observed in willow area - no where else seen. about the mushrooms was a small Sciarid? also some of the larger Sciarids (?) were taken from old lemming burrows by blowing cigarette smoke into them & the flies coming out. a few (5) Saldids were in evidence about the old beach line. Mosquitoes were at very low level even

August 4 through clear - depression due to the cold wind?? 1 Longspur seen during afternoon about the plot area. Several unidentified moths apparently different from the second ones observed in flight but not captured. A number of small Scopeumatids observed on ridge some in copula.

August 5 Exploratory work on ridge south of Wilimovsky Pass - wonderfully clear breeze light, not unduly cold - mosquitoes not in great evidence. In staminate Petasites patch 1st Bombus workers observed + taken along with queens of same species red banded with yellow tails viz. Bombus sylvicola also queens of Bombus moderatus were at the same flowers. all were collecting pollen (this about 1:30 - 5:00 pm (period of observation) None were observed on the pistillate flowers which grow in adjacent patches - not with the staminate beds. Large numbers of Muscoid flies in evidence on the Petasites both pistillate + staminate flowers as also a few midges + ichneumonids.

August 6 Exploratory work out on ridge near Wilimovsky pass - weather for most part clear + with very little breeze. Mosquitoes in the largest number yet observed - weather

Hurd
1952

Pt. Barrow, Alaska

August 6.

warm - light jacket not worn. The mosquitoes in considerable abundance even about A.R.L. & much more so out on the marshes. Copious quantities of 612 needed to keep them off - but still hovered about in large clouds making it necessary to periodically clear the air about yourself when working in limited areas. Cigarette smoke has a very strong repellent action on them. Both species of Bombus present & collecting pollen from the staminate patches of Petasites (which incidentally are in margins of the more marshy areas & leads (wet) from the high ridge.. Both workers & queens of B. sylvicola present — no males. Of B. moderatus only queens. One queen of the latter was observed on high dry ridge cutting off bits of willow leaves (some of which are red) and carrying(?) in mouth the masticated(?) portions off. No nests located to date. A new moth to the area was captured flying on high ridge (♂) and one other noted. Many Syrphids of 3 spp about the staminate flowers of Petasites apparently after nectar - also a ♂ Bot fly (O. tarandi) was observed on the same flowers; 1 other presumably a ♀ buzzed me. Muscoid activity evident

Hurd
1952

R. Barrow, Alaska

August 6

in all Patches of Potentilla as well as the Saxifrages, Papaver (which is now at peak bloom in the ridge area. Many (±10) Longspurs noted on ridge around Willoughby Pass.

August 7

Ridge plots this afternoon (12 - 5:30) on a very clear day but with a cool breeze - apparently held mosquitoes down to minimum probably so no more than 50-100 all afternoon. Plots essentially same as last time, but Ichneumonids down a little. collected 1 vestigial winged Tipulid - only one seen. around + on surfaces of Arctophila pond is a different Sciomyzid than seen previously - also the real pesky critter out in greatest numbers ±5 per sq. meter especially on grass within surface of ridge. at Arctophila pond only 1 adult Trichop seen - green species of chironomid much more abundant probably owing to appearance of females - still in all there is probably less than 5 per sq. meter of pond surface. around ARL this a.m. early chironomid midge out in great numbers + also this evening. Sandpipers are feeding on the larvae of these ones in the tundra pools behind ARL. A few mosquitoes noted in this area also.

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Pt. Barrow, Alaska

August 8. clear + relatively warm all day with slight east wind. Spent day on bird trapping grid behind ARL. Chironomids in considerable abundance + towards evening formed swarming groups over the smaller + grassy tundra pools. A few mosquitoes noted but apparently depressed owing to the coolness of breeze.

August 9 Banding in grid behind ARL

August 10 Afternoon spent at plots on ridge - light rain of morning had stopped and overcast shifting about with periodic sunshine from 3:30 pm on overcast + east wind becoming colder towards 5 pm. Insect activity on surface seemed much less than last time - consisting of mostly small ichneumonid parasites and muscoid flies. An occasional chrysomelid larva encountered - no adults seen, 1 green lepidopterous larva encountered in first sq. meter plot. Spiders ran about 3-5 per sq meter on high ridge and were fairly active.

August 11 Day in Lab.

August 12 On banding grid - many midges in evidence but far below any previous level - [illegible] observed on the banding grid.

August 13 Out on ridge sampling. Overcast with occasional rain; very few insects could be found anywhere quite a number of dead

Brewd
1952

R. Barrow, Alaska

August 13

muscoid flies found about vegetation. In the floral heads (non ligulate) of Senecio there was a small vestigial winged ichneumonoid in fair abundance 2 to 3 per head - these are possibly the pollinators for a few of same sp. also seen in the ligulate flowers and close examination revealed traces of pollen clinging to their bodies. On the tops + in the bright green clumps of "long shafted" mosses were found a number of Chrysomela subsulcata larvae apparently approaching pupation no adult Chrysomela encountered. A green lepidopterous larva was observed walking across the Petasites vegetation. Blowing smoke into the holes along old beach line failed this time to produce any evidence of Sciarids. A few spiders observed but not too many. Longspurs were flocking in groups up to as high as 29 - those feeding were foraging on vegetation - observations include feeding at seed heads of Luzula + Potentilla (see stomach analysis. No Bombus were observed. A few ichneumonids were observed running through the vegetation but a very marked drop had occurred in their numbers.

Hurd
1952

Pt. Barrow, Alaska

August 14

Day spent banding on grid

August 15

Day spent in the Lab catching up.

August 16

Day spent in Lab in morning out on ridge aft. see data sheets

August 17

Strong wind came up overcast as usual. spent day in banding.

August 18 Wind continues to blow - spend day banding.

August 19

Overcast with occasional snow flurries spent afternoon out on ridge. Biting cold East wind blowing. Insect activity at lowest level since early this season. There was no surface activity except a few collembola + an occasional ichneumonid. a few spiders [illegible] noted but not [illegible] of [illegible] [illegible] [illegible] meter plot, on [illegible] ponds on water surface there has been accumulating since August 16th a film of collembola - not in great numbers but conspicuously.

August 20

Clear + warm - revisited ridge plot area - only difference between yesterday + today is that an occasional [illegible] [illegible] fly [illegible] on [illegible] flowers of <u>Senecio</u> - for all practical purposes the picture at the plots [illegible] the same

Hurd
1952

Pt. Barrow, Alaska

in spite of the fact that temperatures on high polygons rose from ±1°C to ±9°C in 3-4 hrs. At the stream below Wolkschillay slough noted a number of muscoid flies but not in any great numbers. Also here & there a chironomid adult was encountered. The Bombus seen all afternoon. Dominant & conspicuous flowering vascular is Eriophorum. Petasites is about through blooming except for a few plants in the marshy areas especially near the edges. Ryopsis is about shot as is Cochlearia etc. Many Saxifrages are in bloom. Today much like football weather in the fall - air has nip about it.

August 21 → Clear - this am on shady side of buildings in gravel area there was first coat of frost. Went out on the ridge at the stream near Wolkschlly slough area. Prodigious sweeping of vegetation adjacent to stream yielded a few muscoid flies, but not many actually considering the large number of sweeps ±10 to get one fly. Sweeping along a bluff a few midges. But sweeping on the ridge itself failed to demonstrate anything. At flowers of Senecio an occasional muscoid fly was observed. On rocky areas & also high polygons a few ichneumons were noted. Some small, nevans ±1/

August 21 of midges (Spaniotoma-like) were observed behind ARL.

August 22 Clear but becoming overcast. Surface plots on ridge remained unchanged from last visit — i.e. nothing on a per meter basis found. Along willow ridge a few ichneumonids present as well as 3 or 4 mycetophilids found. On surfaces of some pools + on the surface of ground Collembola can be observed but not in any great number. An occasional mite was observed. No Bombus observed at all. Saw only 3 longspurs all afternoon.

August 23 Banding on grid — weather turned very cold + overcast with a few sleety periods in morning — also rain. Had to close traps most of this coupled with high winds. Towards late evening overcast began to break up + it got cold — gravel around buildings froze and certain ponds behind ARL were frozen over with thin sheet of ice by midnight.

August 24 Reset traps behind ARL many ponds with thin sheets of ice on them and ground frozen somewhat at surface in bare areas. Although a strong 16-20 mph wind blowing the sky is clearing off

Hurd
1952

14 Barrow, Alaska

<u>August 24</u>

but not noticeably warming up.

<u>August 25</u>

Out in sedge & sampling areas. Weather overcast with light east wind over base though at 3:30 p.m. Insect activity on surface not unchanged from last visit. The meta plots and their replicates yielded nothing except occasional spider + ichneumonid. At willow sedge ichneumonids a bit more evident but less than 1 per sq. meter. An occasional spider also encountered. 2 mycetophilid adults taken - otherwise no other adult insects noted on surface. Longspurs were moving constantly in flocks up to 25 birds some were observed feeding on *Ranunculus nivalis* seeds which are quite abundant & accessible still on the floral remains of this years bloom. These seeds previously det. for Wiggins as *Potentilla emarginata* but aren't.

<u>August 26</u>

Day spent catching up in the laboratory.

August 27 Banding on grid generally clear with light wind though almost not noticeable. Midges in small numbers in evidence behind ARL on grid - sweeping yielded a small mosquito collection of them. Dug up the lemming carcass can which was made

August 27

same time again when the few inches (± 2) of sandy soil around the cans many fly pupae were present these brought into the laboratory + placed in rearing jars. 1 large Tipulid larvae was also dug out. Sweeping the arctophila ponds behind AKL also yielded a few muscoid flies + 1 ichneumonid.

August 28

Banding on grid and afternoon spent out at the ridge with surface plots etc. Overcast and cool. light wind, no insects present on any of the surface plots or replicates a few spiders were taken though. There was a large number of Longspurs flying now in flocks - the largest movement I've seen since flocking began. Some flocks paused to feed along edges of marsh on Ranunculus nivalis seeds - some apparently on Cochlearia - some on Luzula - hardly any birds noted feeding on higher ground. Dug into the compact sphagnum moss clumps and others moss clumps + found large numbers of the chrysomelid pupae - also 2 adults. 1 very spiny tipulid pupa also found + a few small fly pupae. The "mushrooms" still with many mycetophilid larvae those collected + pickled in alkey.

Hurd
1952

Pt Barrow, Alaska

August 28

Red Phalarope juveniles conspicuous in most bodies of water even the ponds behind AKL and out in the marshes, lagoon, & ocean. Those on the tundra ponds are to be seen whirligiging for food?

August 29 Banding in quiet

August 30 Spent afternoon afield setting Dicrostonyx snap traps along ridge, collecting juvenal Phalaropes, 1 juv. Jaeger and Buntings. The latter at Nuwuk.

August 31 overcast most of day, but during afternoon clouds broke up somewhat and sun shone for periods up to 1/2 hr. Spent afternoon out on plots on ridge - scarcely any wind temperature apparently dropped towards 5 as air acquired a nip. Insect activity in adult stages practically nil - 1 Tachinid fly found along old beach line in willow assoc. - a few ichneumonids were taken in ant situation but lower than any previous visit. Spiders present but not high probably about 1 per sq. meter. 1 ad midge (Spaniotoma-like) was found on ridge, a ♂. Most of the mushrooms present are with various larval instars of Sciarids + Mycetophilids. Long Spur activity much reduced over last visit (Aug 28) probably 20 birds seen in 4 hrs

Hurd
1952

Pt. Barrow, Alaska

September 1 Banding on grid. Intermittent sunshine periods revealed on grid chironomid adults few in number about small grass filled tundra pools + appeared to be same black + yellow sp taken on August 27. On early morning trip out to ridge 2 mi SE showed a couple of small longspur flocks present (about 7 or 8 birds / flock).

September 2 Banding in grid overcast, snow flurries this AM. On trip out to ridge this am saw 2 flocks of about 15 birds each and while checking snap traps a few (3-5) were observed.

September 3 Banding in grid — also sampling day spent afternoon out on ridge. This am the small tundra ponds had a thin ±1/8" of ice + most of ground frozen — but thawed by end of day. In general weather cold but quite pleasant with very little wind. No surface insects present on ridge. Saw 3 longspurs on trip out to ridge this AM and none this afternoon. Set live lemming traps + additional [illegible] traps. The tundra is now well into its autumnal coat — red colored arctophila very conspicuous and grasses fast becoming brownish. Even so many plants still flowering as S. cernua, S. hirculus, Cardamine

Hurd
1952

Pt. Barrow, Alaska

September 3 Senecio etc. Plots were photographed this date. Rearing of Calliphorids & Sciomyzids proving very productive in lab.

September 4 Went out to ridge 2 mi SE to check snap traps & pick up live trapped lemmings - ground with a frost like snow imparting a wintry aspect to all. Saw 3 Longspurs during the trip out & back (8 am 10 am). Spent most of the day working on tissue stuff for Rausch. Started snow flurrying earnestly around 5:30 pm & continued off & on. Leaving the ground with thin but open film of snow. Should freeze tonight.

September 5 Went out to ridge & checked the traps for lemmings. Ponds frozen over with as much as 1" of ice on some. Above [illegible] average I should guess is around 1/2". Snow fell off and on. Worked on Lemming tissues for Rausch. Saw 3 Long-spurs on trip out to ridge

September 6 Banding on grid - spent day in lab for most part - ponds frozen over still and blanket of snow covered the tundra this A.M. Surface counts of insects discontinued this date since no activity found anywhere. Apparently low temperatures & freezing of ponds caused this. Only

Bird
1952

Pt. Barrow, Alaska

September 6 — an occasional ... Phalarope noted on tundra ... out in fresh water lake ... edge or lagoon - in other words any body of water not frozen over.

September 7 — Banding in grid - day after Wilimovsky's party - nothing accomplished. Ponds thawing

September 8 — Woke up to a blanket of snow covering the tundra - this melted off by noon and ponds almost freed of ice. Day was characterized by snow flurries, sunshine & towards evening a very fine powdery snow began to fall (around 7 pm), spent day banding on grid & in lab. Also made trip out to the ridge to ... & get soil samples ... ... - at last got off stuff to ... Woke

September 9 — up to rather light snow cover on everything. Spent ... in lab cleaning up ... & ... things. Day overcast - snow melted before noon off most of the ground especially ... areas.

September 10 — Day on grid banding.

11 — " " " "

12 — " " " " ; stopped banding via George went down to Britton Manor to take soil samples. Started to run these through at 2200. Buntings flying towards Pt. in large (10-20) flocks

Hurd
1952

Pt. Barrow, Alaska

September 13

Banding on grid. Traps attacked by Snowy Owl. 2 Buntings killed 1 banded + 1 unbanded – traps beat up as badly as when dogs bother them. A similar instance occurred on afternoon of September 12th at about 6:00 pm. One owl smaller than the Snowy Owl was noted in company with the Snowy Owl – its identity in question owing to darkness but didn't appear to be a young Snowy Owl. I have broken up the grid trap arrangement owing largely to the concentration of Buntings about the 1st row of traps (#6 + 7 in particular) and have concentrated the 3 funnel traps (G5, 6, 7) all four clover leafs and 1 modest-funnel trap. Visited Johnny Bottum's magnetic station and also the Bureau of Standards ionosphere set up. Continuing to run soil samples from Britton's manor. Day overcast. Light powdery snow early this morning. Ponds with light ice sheet in them. Chironomid larvae, especially large red are easily demonstrable in mud in bottoms without vegetation. One of the soil samples from Britton Manor (one from high polygon – mainly grass cover) yielded large numbers of Staphylinid and Carabid adults plus usual Collembola.

Aug? 1952 — Pt. Barrow, Alaska

September 14 continued grid banding.
15 " " "
16 " " "
17 " " " fine snow covered the tundra - sun came out a few times - Buntings at lowest pop level - caught 1 longspur shot a Slate colored Junco behind Animal House. Spent most of day on talk for Alaska Science conference talk - did some packing
18. Left traps set on the grid until 1300 but no Buntings were in them - only 3 Redpolls. While picking up the traps did see 5 or 6 Buntings in flight around the dumps. Most of today spent in getting odds & ends taken care preparatory for return to Berkeley.

∞

1

[illegible]: overcast + foggy wind moderate

First scan
[illegible]: June 18, 1952
Hand
Pt. Barrow, Alaska

Can count: not set up

Surface fauna: no animal life noted.

Berlese or mole: not run

Vegetation notes:

Weather during run: overcast & foggy moderate wind.

[illegible] 2

(Intermediate)

Date June 13, 1952

Hind

Pt. Barrow, Alaska

Can counts: not set up

Surface fauna: 1 chrysomelid Adult (= Chrysomela subsulcata); 4 earthworms; many Collembola in surface

5 + C

Berlese samples: not run

Vegetation notes:

Remarks:

overcast + foggy wind moderate

3
(mesa)
Date June 18, 1952
Hurd
Pt. Barrow, Alaska

Can count: not set up as yet

Surface fauna: a number of 1/8" gray Collembola probably 1 to ccm; a few white collembolans; spiders

Berlese sample: not run

Vegetation notes:

Remarks:

Weather during day: overcast

Sample site no.: 1 Frost scar

Date: June 21, 1952

Hurd

Pt. Barrow, Alaska

Can count: not set up

Surface fauna: 3 adult chrysomelids; 1 spider

4

Berlese sample: not run

Vegetation notes:

Remarks:

[illegible] recent

Sample plot no. 2 (intermediate)

Date June 21, '52

Hurd
Pt. Barrow, Alaska

Can count: not set up

Surface fauna: 5 collembola noted + 1 earthworm

1 + C

[illegible] in soil: not run

Vegetation notes:

Remarks:

Weather conditions: overcast

Station No. 3
(marsh)

Date June 21, 1952
and
P.T. Barrow, Alaska

Can count: not set up

Surface fauna: nothing noted

Berlese sample: not run

Vegetation notes:

Remarks:

Weather during coll.: overcast   Sample Plot No. 1 (First [illegible])

Date June 23 1952

Head

Pt. Barrow, Alaska

Total predation of this plot

Can count: not set up

Surface fauna: 1 spider; 10 collembola

1-C

Berlese sample: not run

Vegetation notes:

[illegible] raised a anthomyiid pupae [illegible] – found 1 per meter plot in first 6 cm area

Weather during count: overcast

Quadrat No.: 2 (intermediate)

Date: June 23, 1952

Hurd

Pt. Barrow, Alaska

Took picture of this plot

Can count: not set up

Surface fauna: 3 chironomid (?) larvae + 1 earthworm and 10 collembola

412

Berlese on sple: not run

Vegetation notes:

Remarks: examination of turf in plot yielded 1 anthomyiid pupae – reared through June '52

Weather during count: overcast

Sample Plot No. 3
(marsh)

Date June 23, 1952

Hund
Pt. Barrow, Alaska

Took picture of this plot.

Can count: not set up

Surface fauna: nothing noted

Berlese samples: not run

Vegetation notes:

Sun, shining but fog closing in front

(First scan)

June 26, 1952

Third

Pt. Barrow, Alaska

Pond samples:
plankton net dragged for approx 10 feet yielded large numbers of orange-red copepod also some indeterminable insectan larvae – app 6 per sq inch of plankton net material. a few saved for identification

Can count: Set up this date

Surface fauna: 1 chrysomelid adult (?= Chrysomela subsulcata)
3 annelids at surface

(4)

Berlese sample: 5 mm of collembola + mites in 8x10 mm vial from 25 cm diameter ring sample that was 10 cm thick; a couple of diptera? larvae in this sample also
Sample saved + in 1 vial

5

~~24~~ 12 hr. Berlese run

Vegetation notes:

Remarks: most of the snow has left the ridge plot area – only a little in the lower plot.

+ morning
very foggy + cold ...
overcast

#2
(intermediate veg.
Date: June 26, 1952
Hurd
P.t. Barrow, Alaska

Bottom sample from near edge of tundra pond which is about 20 ft from this plot yielded following: combined diptera + collembola from 24 hr sample 12"x12"x1" filled 8x40 mm vial to 5 mm level.

Can count: Set up this date

Surface fauna: no animal life noted

Berlese sample: 12 mm of collembola + mites in 8 X 10 mm vial from 25 mm diameter ring sample that was 10 cm thick
a few annelids + less diptera larvae than in marsh plot (#3)
(Sample saved - is in 2 separate vials.)
~~24~~ 12 hr berlese run

Vegetation notes:

Remarks:

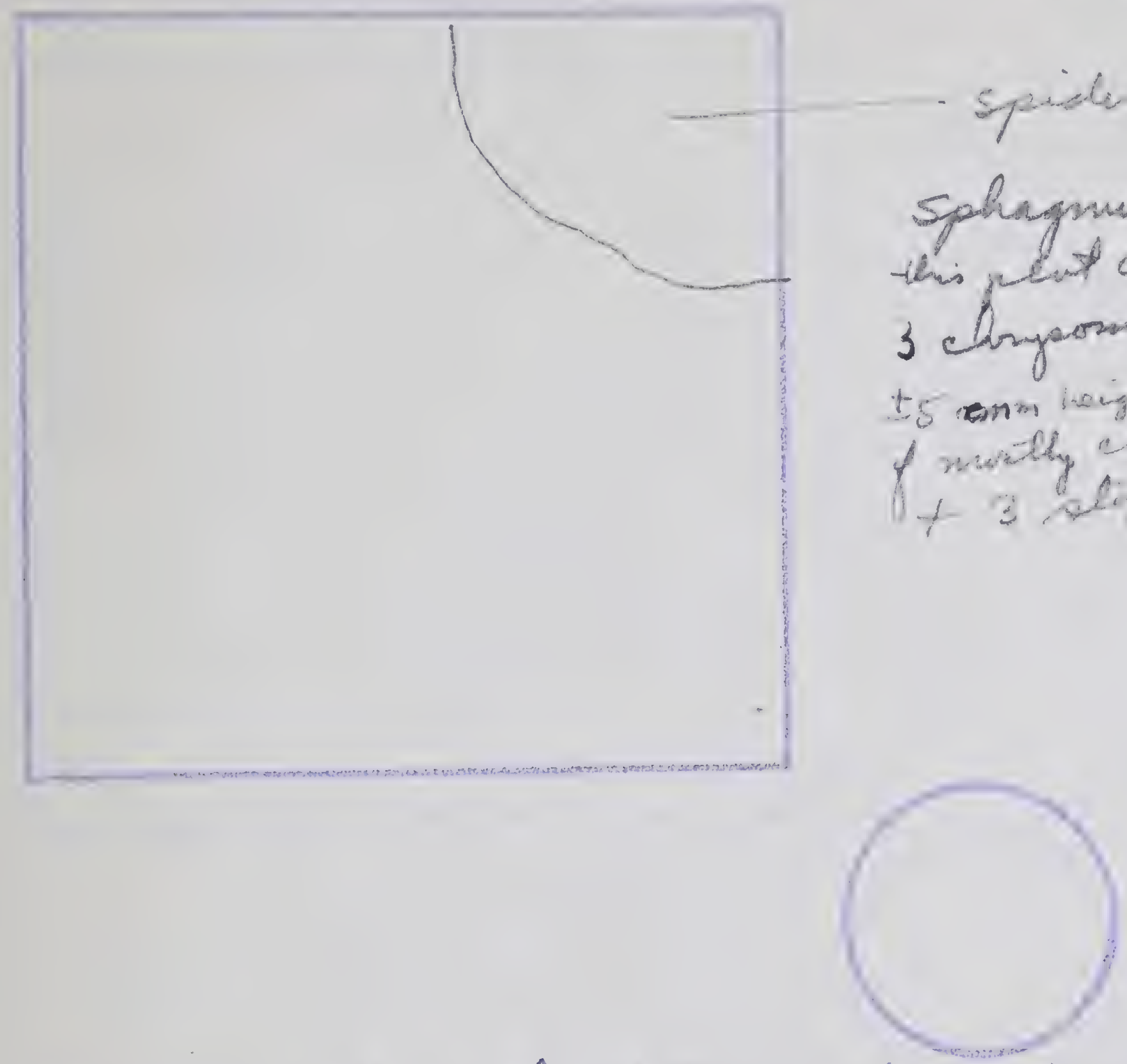
Weather (sunny, cloudy, etc.): overcast with fog closing in and drifting by

Plot no.: 3 (marsh)

Date: June 26, 1952

[illegible]

Pt. Barrow, Alaska



spider webs

Sphagnum moss sample near this plot contained following: 3 chrysomelid pupae and ±5 mm height in 8 x 90 mm vial of mostly collembolans – mites + 3 staphylinids.

Can count: Set up this date & is short in depth ± 8 cm

Surface fauna: large gray-blue collembola probably around 5 per 10 cm

C

Berlese sample: 52 mm of collembola in 8 x 90 mm vial from 25 cm diameter ring sample that was 5 cm in thickness; 1 spider and a number of annelids & dipt. a larvae
(Sample saved & is in 2 vials)

52

12 hour berlese run

Vegetation notes:

Remarks: water content of this sample higher than those of ± 1, 2. ice at about 5-7 cm depth frozen solid

Weather notes: clear
wind moderate

[illegible] No. 1
(First scar)
Date June 29, 1952
Hurd
Pt. Barrow, Alaska

Can count: 5 spiders; 5 staphylinids; 1 Chrysomelid Ad; 1 Hemiptera (saved for id. separately) ±20 long gray Collembola

Surface fauna: 1 Tenthredinid adult; 1 anthomyiid fly; 1 spider.

3

Berlese sample: 12 hour run on Berlese a sample 25 cm diameter × 10 cm thick gave total animal life of 5 mm height in 8×90 mm vial + 3 earthworms. Sample saved & consists of collembola, a few mites, 3 staphs + numerous small dipteran like larvae.

5

Vegetation notes:

Remarks:

clear

wind moderate

2

(Intermediate)

Date June 29, 1952

Hurd

Pt. Barrow, Alaska

sphagnum moss sample 1" x 12" x 12" gave 14mm of collembola, mites, diptera in a 8 x 90 mm - sample saved

Can count: 3 chrysomelid adults; 6 staphylinids; 3 spiders
5 collembola - long gray ones

Surface fauna: 2 spiders

2

Berlese or pole: 3mm of collembola + diptera larvae in bottom of 8 x 90 mm vial — 12 hr run on 25 cm diameter ring sample 10 cm in thickness
(the sample saved)

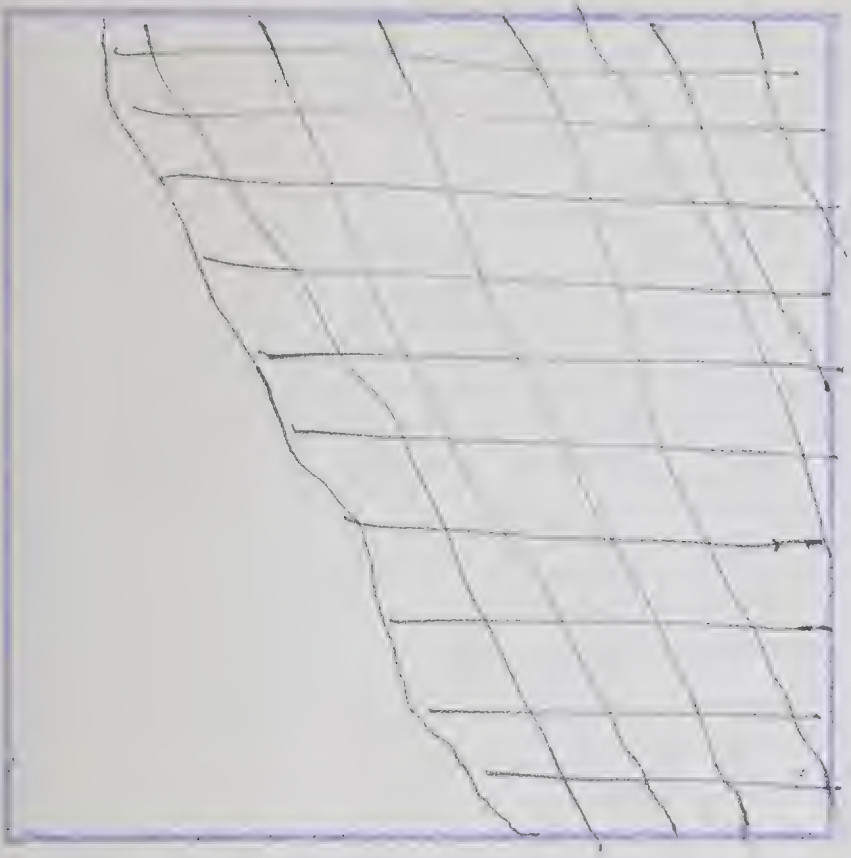
3

Vegetation notes:

Remarks: Funnel traps in east pool 1 Dytiscid adult + 1 large diptera larvae — latter being reared for ID purposes
3 Ad Dolichopodidae flies taken from tundra pool surface (west pool)

Weather: Clear
wind moderate

(marsh)
Date June 29, 1952
wind
Pt. Barrow, Alaska



Can counts: 1/2" water in bottom of can surface of which was jam packed with a film of collembola

Surface fauna: cross hatched area is a maze of spider webs, but only 2 spiders noted, a large number of collembola noted in spider web area – less in unshaded area.

2 + C

Berlese sample: 15 mm of collembola + mites in 8 X 90 mm vial – 12 hour sample. 3 diptera larvae 25 cm dia. x 10 cm thick (sample saved)

15

Vegetation notes: area where spider webs are is very wet with an evident film of surface water, unshaded area is much drier and with less collembola

Remarks: Funnel trap in tundra pond near here contained 2 spiders, but since water level had dropped below funnel opening trap moved to pond ~~north~~ west of mata plot # 2

overcast
+ moderately windy

(frost scar)
July 2, 1952
N. Barrow, Alaska
Pond

Pond traps yielded 1 + 2
Dytiscid adults respectively
no Dolichopodids noted on
surface - many copepods +
collembola noted.

Can count: 25 spiders - staphs, 12 collembola

Surface fauna: 1 ad calliphorid; 31 spiders - nothing
else noted

32

Berlese sample: 25 cm dia x 10 cm yielded 10 mm in
height of collembola, many mites, a few small diptera
larvae 1 - in vial 8 X 90 mm (sample saved)
12 hr run

10

Vegetation notes:

Remarks: Black + white photo taken this date

Weather notes: overcast + moderately windy

2 (Intermediate)
Date July 2, 1952
Pt. Barrow, Alaska
Hurd

Can count: 35 spiders; 3 staphs; 1 fungivorid; 1 Tenthredinid; 1 Ephydrid ±15 collembola

Surface fauna: 1 fungivorid adult

1

Berlese sample: 25 cm dia x 7 cm yielded 2½ cm in 8 x 90 mm vial of collembola + mites. additional 5 mm of earthworms + dipteran larvae - 12 hr Berlese (sandy soil)

25*

Vegetation notes:

Remarks: Black + white photograph taken this date

Weather during count overcast + moderately windy

Meter Plot No. 3 (Marsh)

Date July 2, 1952

(Pt. Barrow, Alaska)
Hurd

Spider webs

Can count: film of dead collembola on bottom of can
spiders not in can probably owing to short depth of can

Surface fauna: a few collembola noted; 50 spiders
counted in 10 minutes

50 + L

Berlese on sole: 25 cm x 7 cm yielded 5 mm of
collembola + mites in 8 x 90 mm vial (1) also 3 earthworms
12 hr sample; sample saved

5*

Vegetation notes:

Remarks: Black + white photograph taken this date

Weather during count: *foggy overcast with occasional periods of sunshine*

Water Pit no. *1 (frost scar)*

Date *July 5, 1952*

Pt. Barrow, Alaska
Hurd

Water traps:
1) nothing, pool drying up rapidly
2) 2 dytiscids + 1 dytiscid? larvae; 2 spiders
3) 2 dytiscids, 1 spider

Can count: *10 spiders; 1 chrysomelid adult; 2 staphs; 1 Ephydrid; ± 50 large gray collembola*

Surface fauna: *1 Fungivorid; 15 Ephydrids 1 anthomyiid (large); 7 spiders; 2 cecidomyids; no collembola noted on surface* *11 sciarids*

26

Berlese on soil: *5 mm of Collembola & mites in 8 × 90 mm vial, 2 large dipteran larvae 12 hr Berlese run sample* ~~*sand*~~

5

Vegetation notes: *Kodachrome slide taken this date; Petasites on adjacent frost scar areas in full bloom*

rained in early morning hours hence can had some ± 1/8" rain in it.

Weather during count foggy overcast with occasional sunshine

Meter Plot No. 2 (Intermediate)

Date July 5, 1952

H. Barnes, Clark Hurd

Cap count: 6 spiders; 1 staph ± 75 collembola

Surface fauna: 11 Ephydrids; 8 spiders; 2 Tenthredinids, 10 collembola

21 + C

Berlese sample: 35 mm of collembola, mites, + a few staphs in 8 x 90 mm vial; ± 10 larvae (diptera); 2 earthworms. 12 hr Berlese run sample saved.

35 + 12

Vegetation notes: Kodachrome slide made this date

Remarks: rain water in can ± 1/8"

Weather during count: foggy overcast with occasional sunshine.

Meter Plot No. 3 (Marsh)

Date July 5, 1952

Pt. Barrow, Alaska

Stand

Note: spider web area decreased to point of disappearance — owing? to drying of soil area.

Can count: Thin film of small collembola ±200-300 on surface of rain.

Surface fauna: just below grass cover large numbers of collembola present exact estimate difficult so use Berlese as a guide; 3 spiders

3 + C

Berlese sample: 6 mm in 8 x 90 mm vial of Collembola; 3 diptera larvae; 1 spider; 12 hr Berlese run sample saved

6 + 4

Vegetation notes: Kodachrome slides made this date

[illegible] ± 1/8" rain in bottom of can

Weather during count: overcast with strong southerly wind, sun came out a few times & then briefly.

Study Plot No. 2 (Intermediate)

Date July 8, 1952

Pt. Barrow, Alaska

Hurd

Funnel trays:

1) 1 dytiscid, 3 spiders
2) 1 spider
3) 2 dytiscids; 3 spiders

Can count: 4 spiders; 8 Fungivorids; 4 Staphylinids; ±75 collembola.

Surface fauna: 13 Ephydrids; 11 Fungivorids; 16 spiders and 3 Cecidomyids. Replicates gave a somewhat higher count on Ephydrids ±18, essentially same figure for spiders & Fungivorids; 2 [illegible]myids per sq. meter showed up in 2 of the 5 replicates, also 1 out of the five showed 1 Tipulid adult. Some collembola ± 50 visible without disturbing plant cover.

4316

Berlese sample: 15 mm of collembola, mites & small dipterous larvae in 8 × 90 mm vial; 12 earthworms – 12 hr run – Berlese – Sample saved.

15 ± 1 [illegible]

Vegetation notes: ground very mud boggy and grass obscures immediate surface area – this area not dug up on master plot but in replicates reveals slightly higher spider & collembola count.

Remarks: Longspurs actively feed in the polygon

Weather during count overcast with strong southerly wind, sun came out a few times + then but briefly.

Meter Plot No. 3 (Marsh)

Date July 8, 1952

Pt. Barrow, Alaska
Hurd

Can count: ± 50 collembola

Surface fauna: 12 spiders; ± 30 collembola 1 ephydrid

13+C

Berlese sample: 15 mm of collembola + a few diptera larvae in 8 x 90 mm vial - 12 hr Berlese sample saved.

15

Vegetation notes: soil very moist and still soggy

[illegible]: Longspurs have not been observed feeding in this or comparable situation.

Weather during: clear
slight wind, relatively
warm

2
(Intermediate)
Date July 11, 1952
Pt. Barrow, Alaska
Hurd

1/2" drain, water.

Can count: 8 Tipulids; 5 Muscoids; 3 staphylinids; 1 chrysomela subsulcata; ± 50 Collembola; fungivorids 15; Spiders 17

Surface fauna: primarily muscoid flies in immediate surface ± 30; Staphylinids 3; 1 Carabid; Spiders 1; coccids ± 20; great swarms of midges + a lesser number of mosquitoes, virtually impossible to obtain an accurate approximation, but probably 0 ± 100 in 5 minute count.

65

Berlese sample: 40 mm of collembola + mites in vial 8 x 90 mm
11 staphylinids, 9 earthworms 12 hr run sample
saved

40 + 20

Vegetation notes:

Remarks:

[illegible] clear
slight wind, relatively warm

(marsh)
Date July 11, 1952
Pt. Barrow, Alaska
Hurd

½" rain water

Can count: ±100 collembola; 8; 5 staphylinids; 2 carabids

Surface fauna: consists almost wholly of midges + a few mosquitoes; great swarms were constantly moving across the plot during the count + some resting in the surface vegetation. ±200 per 5 minute count. 3 spiders in regular 15 minute count as well as 1 Ephydrid.

9 [illegible]

Berlese sample: 6 mm of collembola + mites in 8 × 70 mm vial – 12 hr sample saved.

6

Vegetation notes:

Weather during count: overcast with cold wind during count

Study Plot No. 1
(Frost scar)

Date: July 14, 1952
Pt. Barrow, Alaska – Hurd 1952

Funnel Traps
1) Chironomid larvae clinging to screen; 2 spiders
2) Dytiscid larvae, 3
3) 1 spider; 1 Dytiscid and 3 chironomid larvae

— ½" rainwater

Pan count: 15 Tipulids; 5 Fungivorids; 8 spiders; 3 Staphylinids 5 muscoids.

Surface fauna: 1 Tenthredinid; 1 Ichneumonid; 15 muscoid flies – (? anthomyiids or small spp of Tachinid) 5 Sphaerocerids; 9 Fungivorids; 1 Chrysomela subsulcata; 25 (average) for 3 replicates Cecidomyiids; 5 midges (chironomids); 12 spiders; many mites seen walking across exposed soil surface

79

[illegible]: 3 mm of collembola + mites in vial 8X90 mm. sample saved.

3

Vegetation notes: Black + white picture taken this date

Remarks: Insects depressed in activity owing to biting cold wind?

Weather during count overcast with biting cold wind during count

Meter Plot No. 2 (Intermediate)

Date July 14, 1952

Pt. Barrow, Alaska
Hurd

1/2" rain water

Can count: 10 Tipulids; 6 Staphylinids; many small diptera (midges etc) ±50; collembola ±50; spiders 16.

Surface fauna: Spiders 15; Cecidomyids ±75 (av. 3 replicates); Fungivorids 35; Muscoids 20; Ephydrids 15. Some midges (=Chironomids) ±20 (av 3 replicates).

180

Berlese sample: 20 mm of collembola + mites in 8×90 mm vial - 15 cms. of which sand. also 7 anthomyi and 27 diptera larvae.

20+39

Vegetation notes: Black - white taken this date - Photograph

Remarks:

Weather during count overcast with a biting cold wind

Meter Plot No. 3 (Marsh)

Date July 19, 1952

Pt. Barrow, Alaska

Hurd

1/2" rain water

Can count: ± 30 collembola, 5 spiders, 10 Tipulids.

Surface fauna: 7 spiders, 30 midges (all categories).

57

Berlese sample: 5 mm of collembola + mites in vial 8x90 mm
3 dipteran larvae.

5

Vegetation notes: Photographed in black + white this date.

Remarks: soil still very wet + soggy

Weather during count: cloudy with wind from south-west

Mouse Plot No. 1 (…)

Date July 17, 1952

Pt. Barrow, Alaska
Hurd

Pools drying so funnel traps moved to ditch and are out of picture now.

Can count: 21 Tipulids; 5 Staphylinids; 11 small diptera (incl. Fungivorids, cecids, midges etc); 6 spiders; 2 muscoids

Surface fauna: 17 muscoid flies; 6 Ephydrids; 11 Fungivorids; 30 cecids; 15 midges; 10 spiders; mites actively walking over ground and vegetation. replicates yielded on ave. 1 Tipulid per sq. meter

90

Berlese sample: 3 mm in vial 8 x 90 mm of Collembola + mites in 12 hr run – 24 hr run yielded 10 mm of Collembola + mites plus a few diptera larvae, a Staph and 2 ichneumons.

3 +

Vegetation notes: Pitelka photographed this in Kodachrome

Remarks:

wind from south-west

July 17, 1952
N. Barrow, Alaska
Hurd

Can count: 7 Tipulids. 4 Ephydrids; 17 small diptera (cecid, Fungivorids, and midge) 8 spiders

Surface fauna: 2 Tipulids, Muscoids 31; Ephydrids 17
Cecids ± 100; Fungivorids 45; midges (Chironomids) 35.

230

Surface sample: 17 mm of Collembola + mites in vial
8 x 90 mm - 3 tipulid larvae (large) and many fungivorid larvae.

17+

Vegetation notes: Pitelka photographed this plot today in Kodachrome

Remarks:

Weather during count: Cloudy with wind from Southwest

Study Plot No. 3 (marsh)

Date July 17, 1952

R. Barnes, Pitelka, [illegible]
Ford

Can count: 9 tipulids; 11 larval Chrysomela subsulcata.
3 spiders

Surface fauna: 10 spiders; 3 Ephydrids 5 muscoids
1 fungivorid; 5 Cecids and ± 50 midges

79

Berlese sample: 3mm of collembola + mites in 8 x 90 mm vial — sample saved.

3

Vegetation notes: Pitelka photographed this plot today with Kodachrome.

Remarks:

Weather during count: overcast with light easterly breeze diminishing around 5 p.m.

Sample Plot No. 1 (first scan)

Date: July 20, 1952

Pt. Barrow, Alaska

Hurd

Can count: 1 Saldid; 3 staphs; 10 muscoids; 3 Fungivorids; 9 spiders; 1 Chrysomelid; ± 30 midges; 23 Tipulids

Surface fauna: ± 20 Muscoids; 1 Ephydrid; 3 Fungivorids; ± 20 coccids; ± 20 midges; 8 spiders. 2 Tipulids

29

Berlese sample: 5 mm of collembola + mites in 8 x 90 mm vial - 12 hr run

5

Vegetation notes: See Journal

Remarks:

Weather during count: overcast with light easterly breeze diminishing around 5 pm

Sample Plot No. 2 (intermediate)

Date: July 20, 1952

Pt. Barrow, Alaska

Hud

Can count: 14 Tipulids; 4 Styphs; 15 small diptera (eg., midge, fungivorids + Cecids) a few collembola

Surface fauna: 3 Tipulids; Muscoids ±40; Ephydrids 5 Cecids ±50; Fungivorids ±5; midges (Chironomids) ±50

153

Berlese sample: 18 mm of collembola + mites also 1 Styph noted 11 earthworms. the 18 mm of " " were in vial 8 x 90 mm, 12 hr Berlese

IX + IV

Vegetation notes: See journal

Remarks:

Weather during count: overcast with light easterly breeze diminishing around 5 pm

Water Plot No. 3 (Moss)

Date July 20 1952
P. Barrow, Alaska
Hurd

Can count: 4 Tipulids; 2 spiders.

Surface fauna: ±50 midges; 8 spiders; ±10 muscids
1 Ephydrid.

69

Sample as made: 4 mm of Collembola + mites of in vial 8 × 90 mm. — 12 hr Berlese

4

Vegetation notes: See Journal

Remarks:

Weather during count: overcast + very cold wind from SW

[illegible] 1
First Scan

Date: July 23, 1952
Pt. Barrow, Alaska
Hurd

Can count: 13 Tipulids, 1 Chrysomelid larva; 4 spiders; ±100 collembola; 2 small Hymenops (Mymarids?); 1 Muscoid 5 Fungivorids or Sciarids; 1 Staph

Surface fauna: 4 ichneumons; 3 spiders 2 muscoids. less than one Tipulid per sq. meter; 1 fungivorid; 3 midges (small ones) on *Petasites*.

13

Berlese sample: ~~6 m/m in vial 8X90mm of Collembola + mites + 1 large dipt. larva~~
4mm of collembola + mites in vial 8X90mm; 1 large dipteran larva.

9 + 1

Vegetation notes: *Petasites frigida* beginning to have the achenes dehisce

Remarks: Many dead midges observed about + some dead Tipulids result of cold weather?

Weather during count: over cast + very cold wind from SW

Meter Plot No. 2 (Intermediate)

Date July 23, 1952

Pt. Barrow, Alaska
Hurd

Can count: 5 Tipulids; 1 muscoid 4 small Hymenoptera (Mymarids? + ichneumons) ± 50 Collembola ± 30 small diptera mostly fungivorids + Sciarids; 1 spider.

Surface fauna: 1 Tipulid; 3 spiders; 2 muscoids; 3 fungivorids 1 ichneumon; 1 midge (Chironomid.

11

Berlese sample: 15 mm of Collembola + mites in vial 8×90 mm + 2 large muscoid dipt. larvae.

15 + 2

Vegetation notes: see meter plot 2 July 23 1952

Remarks:

[illegible] overcast + very cold wind from S.W.

Meter Plot No. 3 (marsh)

Date July 23, 1952

Pt. Barrow, Alaska

Hurd

Can count: 1 Chrysomelid larva; 1 Tipulid ± 31 Collembola.

Surface fauna: 1 spider + 1 midge per each replicate. an occasional Tipulid encountered + once in the 4 replicates a Muscoid fly.

2

Berlese sample: 6 mm in vial 8X90 mm of Collembola, mites, 1 large diptera larva + 1 small one.

6+2

Vegetation notes: see meter plot #1 July 23, 1952

Remarks:

Weather during count: overcast with sun breaking thru briefly.

Sample Plot No. 1 (Frost Scar)

Date July 26, 1952

Pt. Barrow, Alaska
Hurd

Can count: 12 Tipulid adults; 1 staphylinid; 3 fungivorids; 8 small Hymenops; a few collembola & 6 spiders

Surface fauna: 2 spiders; 6 muscoid flies; 1 Chrysomela subsulcata; 1 ichneumonid; 1 Tipulid; 3 [illegible]; 1 midge (chironomid)

15

H plate sample: 3 mm. of collembola + mites in 8 X 90 mm vial

3

Vegetation notes: Photographed [illegible] this date

Remarks:

Weather during count: overcast with sun shining occasionally

Sample Plot No. 2 (intermediate)

Date July 26, 195[illegible]

Pt. Barrow, Alaska
Hurd

Can count: 6 Tipulids, 2 spiders, a few collembola; 5 small Hymenoptera, 11 small diptera (cecids, Fungivorids etc.)

Surface fauna: 3 muscoids; 1 Tipulid; 2 spiders; 2 midges (Chironomids); 1 fungivorid; 1 ichneumon. & few collembola

10 TC

Berlese sample: 15 mm of collembola + mites additional material in same vial is earthworms, diptera larvae & spiders

15 +

Vegetation notes: Photographed Kodachrome this date

Remarks:

Weather during count: overcast, sun broke thru briefly

Sample plot no. 3 (marsh)

Date July 26 1952

Pt. Barrow, Alaska

Hurd

Can count: 1 Chrysomela subsulcata larva; 1 spider. + few collembola

Surface fauna: 1 muscoid; 3 midges (all Chironomids)

4

Berlese sample: 2 mm of Collembola + mites in vial 8X90 mm.

2

Vegetation notes: Photographed in Kodachrome this date.

Remarks:

Weather during count: snow flurries
wind not very strong NW

Water Plot No. 1
(first year)

Date July 29 1952
Pt. Barrow, Alaska
Hurd

½" water

Can count: 7 Tipulids; 1 Chrysomela subsulcata larva; 8 small Hymenoptera (most ichneumonids); 1 muscoid; 5 spiders; 3 fungivorids

Surface fauna: 3 muscoids; 6 midges; 1 spider; (Chrysomela subsulcata; replicate yielded 1 to 2 Chrysomela - both adults + larvae

13

Berlese sample: 4 mm of Collembola + mites in vial 8 x 90 mm

4

Vegetation notes: wet

Remarks:

snow flurries
wind not very strong NW

(Intermediate)
Date July 29, 1952
R. Barrows Black
Head

[illegible]

Can count: 9 Tipulids; 15 ichneumonoids; 5 fungivorids
3 midges; 5 spiders; 1 muscoid

Surface fauna: 5 midges (very small sp); 2 spiders; 3
muscoids

16

Berlese sample: 15 mm of Collembola + mites in
vial 8 × 90 mm — additional material is
diptera larvae — mycetophilids & very numerous

15 + ?

Vegetation notes: wet

[illegible] snow flurries wind not very strong NW

[illegible] 3 (marsh)

Date July 25, 1952

Pt. Barrow Alaska

Hund

Can count: 1 muscid; 1 oligonomid subradicata larva

Surface fauna: 1 spider. occasional muscid showed up in replicate mets/plots

1

[illegible]: 3 mm of collembola + mites in vial 8 × 90 mm. 3

Vegetation notes: wet

[illegible]

Weather conditions: overcast with sun off + on increasing cloudiness towards 5 pm

1
(frost scar)
Date August 1, 1952
Pt. Barrow, Alaska
(Hurd)

Water traps
1) empty
2) 2 flies - funnel part way below water level

Can count: 1 Ichneumonid; 1 Saldid; 3 spiders; 1 chrysomela subandeate larva; 3 dead Tipulids; 3 staphylinids

Surface fauna: 5-10 Ichneumonids per sq. meter; 2-17 muscoids depending if sun was out over all avg. ±10; ±2 spiders; ±1 midge per plot; ±1 chrysomela adult + ±1 chrysomela larva.

22

Surface sample: 3 mm of collembola + mites in vial 8 X 90 mm

3

Vegetation notes:

Remarks:

WEATHER DURING COUNT *overcast and sun off + on with increasing cloudiness towards 5 pm*

STUDY PLOT NO. *2 (Intermediate)*

DATE *August 1, 1952*

Pt. Barrow, Alaska
Hurd

Can count: *5 muscoids; 1 fungivorid; 2 chironomid larvae; 2 ichneumonids 1 spider*

Surface fauna: *±10 muscoid flies ±5 spiders; ±6 ichneumonids*

33

Soil samples: *Note of plot while collecting specimen during count, 15 mm of Collembola + mites in vial 8×40mm many additional specimens of fungivorid larvae*

151

Vegetation notes: *still about same as last visit*

Remarks:

Aug 1952

Weather during count: overcast with sun off + on increasing cloudiness towards 5 pm

meter plot #3 Marsh Pt. Barrow, Alaska

.

Can count: 3 muscid flies 1 chrysomela larva 5 spiders

Surface fauna: 2 muscid flies; 1 spider; 1 chrysomela larva; ± 5 midges usually small ones, occasionally ichneumonid 2 of 4 replicates showed 1.

8

Berlese sample: 3 mm of collembola + mites in vail 8 × 90 mm (part of sample saved

3

Vegetation Notes: still very wet

Hurd
1952
Pt. Barrow
Alaska

Weather during count: Clear with cold east wind

Meterplot # 1
frost scar

Date: August 4, 1952

Can count: 1 Saldid; 3 dead Typulids; 5 spiders 2 staphylinids; 4 larva of Chrysomela subsulcata

Surface fauna: 5-8 ichneumonids per sq meter ± 15 muscoids per sq meter ±1 Chrysomela subsulcata larva per sq meter, occasional adult.

22

Berlese sample: 6mm of Collembola + mites

6

Vegetation notes: Photographed this date

Remarks: see Journal

HURD 1952 Pt Barrow, Alaska

Weather during count: clear with cold east wind

Meter plot #2 (Intermediate)

Date: August 4, 1952

Can Count: 2 chrysomela larvae. 3 spiders 4 ichneumonoids - all small

Surface fauna: ±4 spiders. ±12 muscoids ±10 ichneumonoids

26

Berlese sample: 8 mm of Collembola & mites

8

Vegetation notes: Photographed this date

Remarks: see Journal

Hurd
1952
Pt. Barrow
Alaska

Weather during count: clear with cold east wind

Meter plot #3
(marsh)

Date: August 8, 1952

Can count: empty

Surface fauna: ±2 muscoid flies, ±1 spider, ±1 chrysomelid larvae; occasional ichneumon

4

Berlese sample: 6 mm of Collembola + mites

6

Vegetation notes: Photographed this date.

Remarks: see Journal

Hind 1952
Pt. Barrow
Alaska

Weather during count: clear

Meter Plot # 1
frost scar

August 7, 1952

Can count: 1 Saldid; 4 spiders; 3 Staphylinids
4 Chrysomelid larvae; - muscoid flies

Surface fauna: ± 15 muscoid flies; ± 5 ichneumonids
± 1 Chrysomela larva per sq. m.

21

Berlese sample: 3 mm of Collembola + mites

3

Vegetation notes

Remarks:

Hurd 1952
Pt. Barrow
Alaska

<u>Weather during count</u>: clear

Meter plot # 2
~~[illegible] Sea~~
Intermediate
August 7, 1952

<u>Can count</u>: 1 chrysomela larva; ~~4~~ spiders
5 muscoid flies

<u>Surface fauna</u> ±5 spiders ±12 muscoids ±8
ichneumonids (small)

25

<u>Berlese Sample</u>: 6 mm of Collembola & mites
note: the material in [illegible]
24 hr run.

6*

<u>Vegetation notes</u>

<u>Remarks</u>:

Hurd
1952
Pt. Barrow
Alaska

Weather during count:

Meter plot #3
Marsh

August 7, 1952

Can count: empty

Surface fauna: ±1 muscoid fly ±1 spider; ±1 chrysomela larvae; occasional ichneumonid.

3

Berlese sample: 6 mm of Collembola + mites

6

Vegetation notes:

Remarks:

Heard
1952
R.H. Barrow,
Alleck

Weather during count: overcast with occasional brief gusts of rain and wind

Meter plot #1
Frost scar
August 10, 1952

Can count: 1 chrysomelid larva, 3 spiders

Surface fauna: ±5 Muscoid flies; ±5 spiders
±6 ichneumonids 16

Berlese sample

Vegetation notes - wet

Hurd
1952
Pt. Barrow,
Alaska

Weather during count: overcast with occasional brief periods of sun — east wind

Meter plot # 2
Intermediate
August 10, 1952

Can count: 1 large spider

Surface fauna ±6 muscoid flies ±4 spiders ±8 ichneumonids 18

Berlese sample:

Vegetation notes: wet

Hurd
1952
N. Barrow
Alaska

Weather during count: overcast with occasional brief periods of sun - east wind

Meta plot #3
Marsh
August 10, 1952

Can count - empty

Surface fauna; ± 1 Muscoid fly; ± 3 spiders
occasional ichneumonid 4

Berlese sample: 3 min - only [illegible] mites and [illegible]

3

Vegetation notes: wet

Hurd
1952
Pt. Barrow
Alaska

Weather during count:
overcast - occasional
light sprinkles

Wet plot #1
First Scan.
August 13, 1952

Can Count - a few (7) ichneumonids 3 chrysomelid
larvae 5 spiders 2 muscoid

<u>Surface fauna</u>: ±1 muscoid fly. ±5 spiders.
±1 ichneumonid
7

<u>Burlese</u>

Hurd
1952
Pt. Barrow
Alaska

Weather: sunny, cool; overcast
with occasional light drizzle

Meter plot #2
Intermediate

August 13, 1952

Can count: 10 ichneumonids, 1 snow crane and 2 spiders
+ 1 chrysomelid larva.

Surface fauna: 1 snow crane fly, 1 spider;
1 carabid, 1 ichneumonid

Berlese sample:

Swept

Hut 145 – Pt. Barrow Alaska

Weather: heavy overcast. overcast with occasional sprinkle

Met. plot 3 [illegible] August 13, 1952

Can count – empty

Surface count: 21 spiders

Berlese

Aug. 1952 Pt. Barrow Alaska

Weather during count: overcast + windy

meter plot #1 First [illegible]
Pt. Barrow, Alaska
August 16, 1952

Can count: 7 ichneumonids 5 spiders 3 chrysomelid larva

Surface count – nothing on a per meter basis. occasional spider + only 4 muscoids seen all afternoon.

Barbara

Hurd 1952

Weather during count: overcast + windy

Meter plot # 2
Intermediate

can count: 5 ichneumonoids; 4 spiders · 1 chrysomelid larva.

Surface fauna - nothing on a per meter basis occasional ichneumonoid noted + spider

0

Berlese:

Hurd
1952
Pt. Barrow
Alaska

Weather during count:
overcast + windy

Meter plot # 3
Marsh
August 16, 1952

Can count: empty

Surface count: nothing - occasional spider

probably at rate of 1 per 5 m.

Berlese sample

Hurd
1952
Pt. Barrow
Alaska

Weather during count:
over cast with biting
East wind

Meta. plot # 1
First scan

August 19, 1952

Can count: empty

Surface: nothing occasional [illegible] observed
on flowers but none in replicated plots.

Berlese:

Vegetation notes: [illegible] this date

Arid 1952 Pt. Barrow Alaska

Weather during count: overcast with rising East wind

Beta plot #2 Intermediate

August 19, 1952

Can count: empty

Surface count: nothing 0

Berlese

Vegetation notes: Kodachrome this date

Hurd 1452 Pt. Barrow Alaska

weather during count: overcast with bitterly East wind

Mole plot # 3 Marsh

August 11, 1952

Can around empty

Surface count: nothing 0

Burlaps:

Vegetation notes — Kodachrome this lot

Hurd
1952
H. Barrow
Alaska

Weather during count:

Meter plot #1
First Scar

August 22, 1952

Can count – a few 3 ichneumonids & 1 spider.

Surface count: Nothing except a few [illegible] at [illegible] now & then. O.K.

Berlese:

Hand [illegible]
1951
Pt. Barrow
Alaska

weather during count.

[illegible]
[illegible]
August 22, 1951

Own count: 6 small ichneumonids

Surface count: nothing - occasional [illegible]
O + C

Berlese:

Aug. 1952
H. Barrow
Alaska

weather during count:

Meta plot #3
Marsh
August 22, 1952

Can count: empty

Surface count: nothing.

0

Berlese:

Pt. Barrow Alaska third 1952

Weather during count:
overcast with light E. wind

Water plot #1
Frost scar
August 22, 1952
= 25°

Can count: 7 spiders

Surface count: less than 1 spider per sq. meter
otherwise nothing. <1

Berlese:

Hurd
1952

Weather during count:
overcast with light E wind

Meter plot # 2
Intermediate
August 25, 1951

Can count: 4 spiders

Surface count: less than 1 spider per sq. meter.
< 1

Berlese

phurd 1952

Weather during count:
overcast with light E wind

Data plot 19
Marsh
August 25, 1952

Can Count: empty

surface count: nothing 0

Bulbs:

Hurd
1952

Weather during count: overcast
light east wind

meter plot #1
Forest Seer
August 28, 1952

Can count: empty, except 1 spider

Surface count: occasional spider and chrysomelid
< 1

Berlese

Hund .152 Weather during count: overcast light E wind

Bait plant on Intermediate

August 25 195

= 23½

Can Count - 2 spide.

Surface count occasional spide.

Berkshire

Hurd 1952 | weather during count: overcast with light east wind

Wheat field #3
Trap 2
August 25, 1952
238

corn count: empty

Surface count: nothing — 0

Carlene

Hurd 1952 | Weather during count: overcast with brief [illegible] [illegible] and [illegible] wind

Meta plot [illegible] First Scar August 31, 1952

Can count: 7 spiders

Surface count: occasional spider and 2 ichneumonids in 4 replicates /

Below: ~~or~~

Hurd
1952

Weather during count: overcast but with periods of sunlight up to 10 minutes. Increasing dry wind.

Mite plot II
Intermediate
August 31, 1952

Can Count: 2 spiders

Surface count: 1 spider in 4 of the replicates
a few collembola evident in one or more. <1 [illegible]

Berlese:

Hurd 1952

Weather during count: overcast with sunlight of 5-15 minute periods. Scarcely any wind

Mete plot #3
March
August 31, 1952

Can count: empty.

Surface count: nothing

0

Berlese: 0

Eskimo for Bugs

Caribou fly is called Igutchak (Ewachuck)
Igutchackiak = means new Igutchak
(Ewachuck chuck) - the small one.

Bumblebees also called this - apparently no distinction made between them.

moth is called Akalukisak (pronounced approximately as (akaluchisuck).

Hurd, P.

1952 - 1953

Alaska

Journal: 1953
[insect sampling, notes, counts]

Hurd
1953

Pt. Barrow, Alaska

June 2

arrived Pt. Barrow noon today after virtual through flight from San Francisco - from which departed 7pm June 1. Spent afternoon largely getting set up. Looked at Snowy Owl nest S. of here.

June 3

Spent 1½ hrs out on tundra ± 2½ mi SSE of ARL. Snow cover is approximately 70-80% but is rapidly melting. Day largely overcast with fog & surprisingly warm. Exploratory insect work revealed large numbers of carabid & Staphylinid adults & some larvae of latter in the tightly packed moss (Polytrichaceae) clumps. Several of these were brought in for berlesing. Reports indicate that the Scopeumatid, _Scopeuma vulpinum_ are already in flight. Not many collembola noted or as far as that goes mites either; however, their presence in relative numbers are to be established by Berlese. A few larvae of _Chrysomela subsulcata_ were found in the moss clumps. Plots of last year's work are as follows. Frost scar meter plot free of snow - a few spiders & collembola in evidence on surface. Intermediate & marsh plots covered with snow but melted at the stakes

Hurd
1953

Pt. Barrow, Alaska

June 4 Overcast all day a few brief periods of some sunshine. Spent day in laboratory working on minutens and getting Berlese set ups.

June 5 Spent afternoon out on ridge in exploration of insect activity. Day overcast with high fog & clouds scarcely any wind & quite warm. Carabid & Staphylinid adults in fair number within tightly packed moss. 2 flies observed one the large Scopeuma vulpinum and a smaller sp. probably a scavenger. A few spiders noted wandering over the water & snow free areas. Not very many collembola present & surface mites are low also. Experimentally burned a couple of high centered polygons which were surrounded with snow. Snow cover probably 60-70% lemmings becoming more & more abundant as the snow cover leaves.

June 6 Spent day in lab.

June 7 Out to Nuwuk in afternoon. Clear this am but clouded over in early afternoon. No adult insect activity observed at Nuwuk. Towards evening cleared off. Spent evening working in lab.

June 8 1st day of sampling on ridge. Clear beautiful day snow cover on ridge proper virtually gone. Marsh areas fast becoming filled with water

Hurd
1953

Pt. Barrow, Alaska

June 8 a few spiders observed walking over frost scar areas.

June 9 Day in lab

June 10 Spent morning out on central marsh & LW areas obtaining lemming samples. No insect activity noted on surface

~~July~~ June 11 afternoon on plots. Weather generally overcast with fog but broken sufficiently to allow almost continuous sunshine until 3pm Surface activity of insects scarcely detectable. In moss clumps large number of staphs & some carabids. Occasional Scarpeena vulpinum adult in flight or about dead lemming carcass. Lemming activity quite high. Snow cover down to 20-30% area. A light east wind blew all afternoon.

~~July~~ June 12 In laboratory

13 " "

14 afternoon on ridge plots. Overcast with strong (10-15 mph) east wind. Of interest was the adult leafhopper found in can at frost scar locality.. virtually all of the snow has left the top of ridge and the shoulders are rapidly becoming freed of snow. Tundra is quite dead brown in color & grass cutting of lemmings in evidence everywhere.

Hurd
1953

Pt. Barrow, Alaska

June 15 Day spent in lab.

June 16 " " "

June 17 Spent am at Britton manor. Afternoon on ridge plots. Weather clear with a very few clouds to S.; light east wind. First chironomid of season taken; another sp of staphylinid showed up. Immature Saldid found in can at first scar. Surface activity is spiders - a few collembola. Tearing up moss clumps we can find muscoid pupae. No chrysomela adults or larvae could be demonstrated. Ridge is fully free of snow. The willow patch is drying up. Two flowers of Ranunculus found & are in bloom. Pedicularis plants in evidence on ridge near Wilimovsky Pass. The Scopeuma flies can be found at most of the dead lemming carcasses. Longspur population between Wilimovsky Pass & Sample area is about 4 pairs. Their feeding is about & in the moss clumps - seeds are still being taken. No evidence of anthomyiid or midge adults as yet. I caught a weasel while studying the general ridge for insect activity. 5 more moth pupae were found.

June 18 Britton manor sampling day, q.v.

Hurd
1953

Pt. Barrow, Alaska

June 19

morning spent in laboratory catching up with Berlese sample work and mounting of surface plot insects. Two of the moths (♂ + ♀) emerged in laboratory from cocoons brought in earlier this month. Spent afternoon wiring Berleses

June 20 started out thick fog + cleared towards noon. During counts on ridge plots it was mostly clear and sunny. Insect activity on the increase. 1st Bombus queen noted in flight over ridge; occasional large species of Tenthredinid encountered; Centhomyid flies commencing to emerge. Chrysomela adults on increase. Most conspicuous element of surface fauna are the spiders. water traps yielded 1 ad Dytiscid.

June 21

morning spent in lab. afternoon at Britton Manor. Day overcast with 6-10 mph W wind + fog setting in by early evening.

June 22

Trail run of Britton's soil samples spent rest of day catching up

June 23 Rained off + on most of day - a warm rain which put an end to the snow cover along old beach line. Spent 12:30 - 3:00 pm on ridge plots.

Hurd
1953

Pt. Barrow, Alaska

June 23 Anthomyid flies beginning to emerge and were fairly active in spite of rain. Spider count down over last time, Collembola activity confined to localized situations and their abundance ran around ± 50 per sq meter/15 minutes of observation. Only an occasional specimen of Collembola observed during counts in plots. Ranunculus nivalis blooming a bit more profusely, possibly 50 blossoms in area about the ridge plots + mostly on high ground 1st bloom of this noticed on June 17. Petasites buds becoming much more noticeable and swelling quite rapidly.

June 26

Chironomids of at least 6 spp emerged and the larger spp (2) hovered in swarms. Some mating occurred on the ponds where water level has fallen to almost dry on many of the ridge pools. Anthomyids were quite active most particularly in the marshier areas of the ridge. Spider count was up (see sampling data. On Arctophila ponds spider count way up ± 5 per sq. meter. On Willow areas Tenthredinids emerged but in numbers less than 1/sq. meter.

Hung
1953

Pt. Barrow, Alaska

June 26 Delphacids located (all stages) on high grass topped knolls on ridge. Many adults collected. = Hardya youngi

June 29

Sampling on ridge plots. This am, there was a blanket of snow ± ½" thick on tundra. about an hour later it had melted. Weather for afternoon counts was overcast with light west wind. Midge adults much less conspicuous than on the 26th. Only an occasional one encounter. All counts down over last time, q.v.

July 2

Sampling on ridge - afternoon overcast with rain by 3:30pm. activity mostly midges on arctophila ponds and at the ridge plots. Water traps in arctophila pond yielded 16 Dytiscids adults, the large midge females & pupae thereof. Fungivorids went up in the counts to almost 1 per sq. meter per 15 minutes of observation. Spider activity down over last time with only 2 seen. same holds for anthomyids but rain doubtless had an effect on them. 1st Petasites blossoms noted. Tundra becoming quite green

Hurd
1953

Pt. Barrow, Alaska

July 5 Sampling on ridge this afternoon. Overcast with low fog clearing, but no direct sunlight - cold. Commonest insect per sq. meter basis was the large Fungivorid. Sciarids emerging in larger numbers. Occasional encounters were spiders, anthomyids staphylinids, chrysomelids, and midge (chironomid) adults. See count sheets for quantitative data for above. Water traps in arctophila pond - both empty, which stands in contrast to the previous count, q.v. Petasites blooms more abundant, but not very numerous. Ranunculus blooming in the wetter places but are much below last years phenological equivalent. The Ridge vegetation is becoming quite green but central marsh still the greenest with the contrasting red arctophila ponds. anthomyids around the marsh meter plot are absent - see earlier count sheets - reason?.

July 6

While sampling at Britton manor this morning I observed the female Longspur which on last visit (July 3) had 4 young in the nest near Beach

Hurd
1953

Pt. Barrow, Alaska

Grid foraging for food. She was feeding a single young which was out of the nest & fully fledged. The female was feeding in the habitat represented by the last replicate of the Beach Grid count & which incidentally had the highest surface activity count of any of the sample areas at the manor. That count showed the presence of ±10 Sciarids per square meter per 15 minutes. The female Longspur had a difficult time getting sufficient food for the young judging by its cries throughout the period of observation. She had to make quite spatial gaps between her gathering of one of these little flies & it would have been helpful to have been able to follow her food gathering on a time basis. One of the young of the original set was found dead in the nest rest of young (2) were not found. This afternoon while sampling near the manor itself another case of a female Longspur feeding a single young. The female was attempting to gather chironomid adults

Aug
1953

Pt. Barrow, Alaska

July 6 along the edge of an arctophila pond. Previous observations had shown that the chironomids along the edge of the pond to be only occasional in occurrence. The Longspur would attempt to reach the greater concentration of midge adults which were on the lee side of the blades of arctophila grass by half wading + half fluttering out into the pond 2 to 3 feet.

July 8

afternoon on ridge - started out with light overcast + sunshine as afternoon progressed overcast became increasingly heavier + periods of sunlight decreasing. A cold 5-8 mph SW wind blew all during the counts. Counts up slightly over last time with the fungus gnats (= Fungivorids) being the highest in all types of areas Frost scar ±2; intermediate ±4; marsh ±1. Chironomids came second + these all small species ±1/4" or much less. Only two cecids encountered. Occasionals were for whole afternoon all situations the chrysomela which ran way less than 1 per sq. meter + I doubt if one could be found in ratio of 1 per 50 sq. meters. Two Tipulid adults of 2 spp were

Jefferd
1953

Pt. Barrow, Alaska

July 8 observed. Anthomyids — only 2 specimens of both sexes. Sciarids were only occasionally observed. Foregoing is the total insect composition aside from soil organisms. I did find 2 adults of the Saldid in a sunken can but well water soaked & probably went in last time. Around one willow there were 2 immature Saldids. The Petasites is blooming a bit more but only scattered blooms & this species is not near so common or showy as last. On the first square meter plot there are but 4 flower stalks. Those large areas of last years blooms are only a fraction of what they were as far as vegetative & flowering are concerned. Ranunculus not near so abundant & are confined to moist areas or area east of ridge towards marsh. Arctophila pond traps had nothing in them. Only a few adult midges (chironomids) of the very large type seen. The Saxifrages are beginning to bloom as is also the Rumex. The patch of Pedicularis near Wileimnaty Past is about 1/2 size of last year & the plants are considerably ± 1/2 the size of last year. No bumble bees observed.

Fritz Hand
1953

Pt. Barrow, Alaska

July 8 One of the large deep blue-black muscoid flies was observed on the frost scar area. Activity along the willow portion of the ridge the principal activity was ± 4 fungivorids per sq meter / 15 minutes. The spider count in all types of situation is below 1 per sq. meter / 15 minutes.

July 11

Overcast with a tendency to clear; a few brief periods when sun did break through. The insect counts low. The fungivorids are still the predominant insect in counts. A few crane flies were encountered in ditches between the polygons. Chironomids almost all very small species are present in relatively low numbers.

July 14

Weather overcast with light north wind – cold. Fungivorid activity decidedly up over last time as also muscoid flies, see counts. The crane flies of 2 spp are present but still much below the 1 per sq meter level. The anthomyiid flies are rarely encountered on top of the ridge, but along the willow portion

July 14 of the old beach ridge particularly the area immediately adjacent to the drop off they are somewhat more common but even then not too abundant & much less than 1 per sq. meter per 15 minutes. Petasites blooms are scarce and borne then only on short stalks about 1/2 to 1/3 height of last years dead stalks. At arctophila pond there is a band of dead midges along the edge (windward) which is about 3" to 6" in breadth. The midge (chironomid) hatch which came of on July 12 are among the dead & others are still emerging but then not as on July 12. A few Trichoptera adults of Micrasema scissum are resting on the vegetation. Water traps had only Dytiscids – see count sheets. Ranunculus flowers are on the decrease and rapidly drying up. Counts on willow ridge area gave ±30 Fungivorids (including Sciarids) occasional anthomyiid; ±10 chironomid adults; ±3 Muscoid flies and an occasional ichneumon.

Hurd
1953

Pt. Barrow, Alaska

July 17 afternoon on ridge - weather clear & warm with light 2-5 knot NE wind. Greatest activity of plots noted at intermediate area except for muscids. Tipulids of 3 spp are out in numbers, all except one adjacent to Arctophila pond less than 1 per sq. meter at arctophila pond area that sp runs about 1 to 2 per sq meter. along old beach line great activity of Fungivorids some places over 200 per sq. meter per 15 minutes Tenthredinids and ichneumonids usually less than 1 per sq. meter but in some places 3 to 5. In general chironomids not influenced by clear weather except an emergence of a small species at arctophila pond. A few very large chironomids observed but these are rare. A few green chironomids present at Arctophila pond. Ponds on ridge dried up. Leafhoppers at the leafhopper mound are ... only 1 immature is ...

1953

Pt. Barrow, Alaska

July 19 clear most of day except towards late evening. Air temperature went up to 69.4°F at Britton Manor. This afternoon went out to central marsh area. Chironomids were much in evidence and 1st swarms of mosquitoes (Aedes) were encountered. As the afternoon wore on they became more + more pestiferous! Many of the Arctophila ponds have dried up or almost so — only the larger + deeper ones have water. On all of them the adult caddis flies are in evidence. The marsh crane fly was actively noted in sustained flights of several hundred yards. The insect activity was at the highest thus far noted. One caribou fly was noted + captured. On the shores of Walakpa slough great numbers of muscoid flies probably 15-20 per sq. meter were noted. The chironomids continued to fly on until I went to bed at 2 a.m! They were in flight even over the edge of the ocean

July 20 afternoon on ridge. Overcast light west wind. Insect activity apparently depressed somewhat by cold wind, but the index of activity still high. Large numbers of minute to small chironomids (±40 per sq. meter) were present in reticulated areas between frost blisters most of them climbing up the vegetation. Muscoid activity was not as noticeable as last time but individuals were higher than preceding visit (see counts). Crane fly activity on top of polygons noticeably increased over last visit. Fungivorids dropped. Mosquitoes dropped owing to cold weather but a few were encountered during the counts. Sciarids are on the increase as also the ichneumonids. Spiders were more common in counts than for any immediate previous counts. The vegetation changed quite perceptibly in appearance. Petasites on top of the ridge has appeared with a great profusion of bloom - the stalks are about 1/2 the height of last years dead stems, but even so stand out quite conspicuously. The Ranunculus along the beach ridge (marsh side)

July 20 are at full bloom stage. The *Papaver* on the ridge has begun to bloom in profusion. *Potentilla* is approaching maximum bloom and the common muscoid is quite prominently in + about its flowers - examination of body hairs reveals pollen grains. The ridge has a definite green cast to it, however, not near so noticeable as the marsh. Many of the marsh arctophila ponds have dried up or are rapidly approaching it. On the vegetation in and immediately adjacent to the ponds on marsh large numbers of the caddis fly adult are present. The chironomids resting on vegetation are at an all high. There are probably ±100 per sq. meter - some as high as ±500.

July 22 midge flights (chironomids) came into camp + continued to fly up until 1:30 a.m. Some were found on walls of sleeping quarters while actually numbers not large they were continuous observed.

Pt. Barrow, Alaska

July 23 afternoon on ridge - overcast with 5-10 mph wind S.W. overcast had a few lifts while counting on willow area but not in actual plots. Over all population down. Tipulids not observed even in high polygons. The marsh species has apparently disappeared. Greatest numbers of individuals of Muscids, fungivorids; and Sciarids noted in willow portions of ridge - counts ran thus: ± 15 muscids; ± 5 fungivorids as high as ± 20 in some areas; ± 5 Sciarids but up to ± 25 in certain areas counts all on 15 minute basis. No tipulids noted on the willow ridge. around dead carcasses ~~some~~ ± 5 Borborids? and an occasional Scopeumatid. None of the dead lemming carcasses had any calliphorids around. Chironomids not very abundant - only incidental on higher parts of ridge + occasional on willow area. At arctophila pond the water has a large number of dead ones - very few live ones noted.

Hurd
1953

Pt. Barrow, Alaska

July 26 afternoon on ridge. Generally clear but occasional large clouds floated across sun obscuring it at intervals wind light SE with cold snap to it, Tundra browner than last visit occasioned by last nights' frost? The older *Petasites* blooms showed frost damage also the *Petasites* leaves seem redder & edges turned up more. Insects lower than last visit. No Tipulids seen. Conspicuous are the Muscoid females but they are about 2-4 per sq. meter / 15 minutes depending upon area (habitat). The Scopeumatid along ridge are emerging in small numbers.

A large emergence of chironomids occurred today. Most noticeable clouds of them about fresh water lake and the more marshy areas. In *arctophila ponds* the tiny chironomids are present on water surface - not too many (±3 per sq meter / veg / 15 minutes) chironomids other than those about. First *Senecio* noted to be in bloom on ridge — the non ligulate form.

Hurd
1953

Pt. Barrow, Alaska

July 29 afternoon on ridge light E wind clear! In general counts reflect a continuing decline except at or near ponds or the fresh water lake where the chironomids of the present emergence period (July 26th to date) are very abundant. Most noticeable flights are about the fresh water lake but the ponds of central marsh are equally as large in the case of the larger ponds. Moist areas between polygons of higher country also have a number of midges emerging. The Petasites on lower sites are in full bloom + concentrating the muscoid + the now increasing Syrphid flights. The willow portion of the ridge is dried up considerably and the Papavers are almost gone. The fungivorid population is virtually non-existent as is also the Sciarids. The ichneumonids seem to be decreasing on ridge area. Sawflies haven't been seen for some time now. The Senecio on portions of the ridge continue to bloom since last time but there numbers are scarce. In general the tundra looks much more yellow-brown + acquiring early fall colors

Hurd
1953

Pt. Barrow, Alaska

July 31 Large swarms of chironomids of apparently 2 spp (in separate swarms) formed behind ARL this evening following the overcast which moved in. Swarming commenced shortly after 6pm and abated by 2200 as temperatures fell. They were conspicuous over most of the level grid behind ARL in camp and down at the ocean. John Mohr U.S.C. said they continued to fly individually up to 0200 and were observed in flights over the ocean. Plankton samples by him about 1/4 mile out yielded chironomids in water. No mosquitoes were encountered during my period of observation.

August 1

afternoon on ridge - overcast with thunderstorm to S which eventually moved into area of base etc by 1800 with rain - last peal of thunder was at 1800. wind out on ridge was variable sometimes none at all maximum was at start 13:30 ±10 Knots from West. Rain continued from 1800 until now 2200 + is still coming down. Most significant

Hurd
1953

Pt. Barrow, Alaska

Aug 1 was the drop off in counts of muscoids to less than 1 per meter - this may have been occasioned by cold weather, but even on willow ridge where generally counts are a little higher they were much less than 1 per sq meter/15 minutes Ichneumonids on Frost scar + intermediate sites ran around ±1.5 per sq. meter per 15 minutes. only an occasional midge was observed as spider too. All other surface activity gone. this may be the final crash!!!

August 4 afternoon out on ridge. generally overcast with occasional rift - warm with light east wind. Insect activity continues down - those noted were muscoids + ichneumonids in either areas between frost scars (intermediate) or on willow portion of beach ridge. a few midge (chironomids) were also in evidence, but chironomid activity quite low even along fresh water lake. On way back through Dixon Pass I saw a sulfur butterfly (Colias) and managed to capture it. The item I handed ARL secy was as follows for newsletter:

Hurd
1953

Pt. Barrow, Alaska

August 4 "The first known butterfly from Pt. Barrow was captured today approximately a half mile south of the laboratory. The specimen, a male, is a representative of the sulfur butterfly genus Colias. which is widely distributed over the circumpolar regions extending southward into mid latitudes where at least one species of the genus, the alfalfa butterfly, has become a serious pest. The only published records for the Alaskan Arctic Slope include the foothills of the Brooks Range, Umiat, Barter Island, and Collinson Point. Thus the Pt. Barrow specimen, which doubtless wandered northward from the environs of the Brooks Range, marks the northernmost occurrence of butterflies on the North American continent."

Hurd 1953
Point Barrow, Alaska

Date June 8, 1953 Meter Plot No. 1 Frost Scar

Weather during count clear & quite warm light east wind

clear of snow

no water

Can count: 4 spiders

Surface fauna: 2 spiders

Berlese sample: 3 mm of Collembola & mites in vial 8 X 90 mm. 2 spp (5 specimens) of Staph. adults removed & mounted.

3 + 5

Vegetation notes: not eaten by lemmings

Remarks:

Hurd 1953
Point Barrow, Alaska

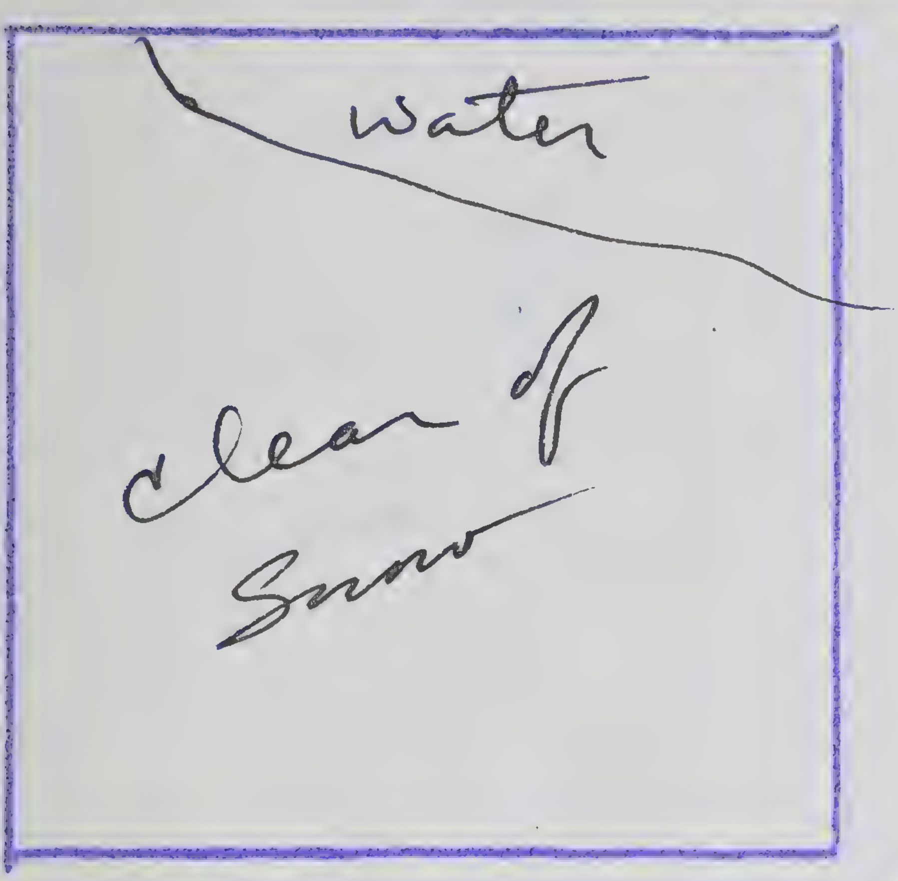
Date June 8

Meter

Plot No. 2

Intermediate

Weather during count: clear warm light east wind



Can count: full of water + ice

Surface fauna: nothing noted

Berlese sample: 1/2 normal thickness. 12 hr run contained 5 mm of Collembola & mites — 4 small staphs mounted on minutens.

5 * +1

Vegetation notes: eaten by lemmings

Remarks:

Hurd 1953
Point Barrow, Alaska

Date June 8

Meter Plot No. 3
marsh

Weather during count clear + quite warm, light east wind

clear of snow

Can count: full of water + ice

Surface fauna: nothing noted

25 mm thickness sample.

Berlese sample: 6 mm of Collembola + mites in vial 8 X 90 mm - 1 tipulid larva - 1 staph ad counted.

6 + 2

Vegetation notes: eaten down by lemmings

Remarks:

Hurd 1953
Point Barrow, Alaska

Date June 11, 1953

Meter Plot No. 1
Frost scar

Weather during count broken fog with constant sunlight light east wind

Can count: 6 spiders; 3 staphs; 1 *Chrysomela* larva

Surface fauna: 1 spider

1

Berlese sample: 5 mm of collembola + mites; 3 tipulid larvae; 5 staphs (2 spp) these last removed & maintained

5 + 8

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date June 11 Meter 2
Plot No. Intermediate

Weather during count broken fog/ constant sunlight during count light E wind

free of water

Can count: water emptied from can which was free of frozen ground this date

Surface fauna: nothing

0

Berlese sample: normal thickness; 5 mm of collembola + mites; ±40 fungivorid (?) larvae and 2 (2 spp) of staph adults there mentioned.

5 + 42

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date June 11

Meter Plot No. 3

Weather during count broken fog with ^marsh^ constant sunlight slight east wind.

free thaw.

Can count: full of wate + stil frozen in ground

Surface fauna: nothing

0

Berlese sample: 30mm thick sample. 3mm of collembola + mites; 1 tipulid larvae; 14 larvae of fungivorids (?).

35 + 15

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date June 14

Meter
Plot No. 1
Frost Scar

Weather during count overcast wind 10-15 East

Can count: 4 spiders; 10 staphylinids (2 spp.); 1 leafhopper

Surface fauna: nothing

0

Berlese sample: 2 mm of mites + collembola; 4 adults (2 spp.) Staphylinidae mounted separately ±10 mycetophiloid larvae.

2 + 11

Vegetation notes:

Remarks:

[illegible]

Hurd 1953
Point Barrow, Alaska

Date June 14

Meter
Plot No. 2
Intermediate

Weather during count overcast; wind 10-15 East

Can count: empty

Surface fauna: nothing

Berlese sample: sample 52 mm thick contained 11 m.m. (8 x 90 mm vial) collembola + mites 3 small staph adults; 1 tipulid larva.

11* + 9

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date June 14

Meter

Plot No. 3 marsh

Weather during count overcast wind 10-15 East

Frozen in

Can count: full of water & still frozen in ± 100 gray-purple collembola floating on H_2O surface

Surface fauna: nothing

0

35 mm thick sample.

Berlese sample: 3 mm collembola & mites ; 3 earthworm 12 diptera larvae 1 spider /

3* + 16

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date June 17

Meter 1

Plot No. First Scan

Weather during count: clear with light E wind

Can count: 7 spiders 5 staphs (3 spp.) 1 immature Saldid

Surface fauna: 3 spiders; 1 ichneumon.

4

Berlese sample: 2 mm of Collembola + mites
1 small tipulid larvae

2 + 1

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date June 17

Meter 2

Plot No. Intermediate

Weather during count clear with light E. wind

Can count: 2 spider

Surface fauna: ± 3 spiders/sq meter

3

Berlese sample: 4 mm of Collembola + mites;
12 diptera larvae.

4+12

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date June 17

Meter
Plot No. 3
marsh

Weather during count clear with light E wind

Can count: frozen in & full of H_2O

Surface fauna: 1 spider/sq. meter. 1

Berlese sample: 3 mm of collembola + mites (in vial 8 x 90 mm) 1 tipulid larvae.

3 + 1

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date June 20

Meter
Plot No. 1
Frost scar

Weather during count mostly clear with sunshine

Can count: 1 chrysomela; 6 large staphs; 4 small staphs; 9 spiders. no collembola

Surface fauna: ±10 spiders; ±1 chrysomela adult; ±1 anthomyiid adult. an occasional Tenthredinid.

1✓

Berlese sample: 1 mm of collembola & mites in vial 8 x 90 mm; 1 ad. staphylinid (small sp.) mounted separately.

1 + 1

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date June 20

Meter
Plot No. 2 Intermediate

Weather during count mostly clear + sunny

Can count: 1 *Chrysomela* adult

Surface fauna: ± 15 spiders; 2 staphs 17

Berlese sample: 4 mm of Collembola + mites; 1 spider; 1 small staphylinid (this mounted separately).

4 + 2

Vegetation notes:

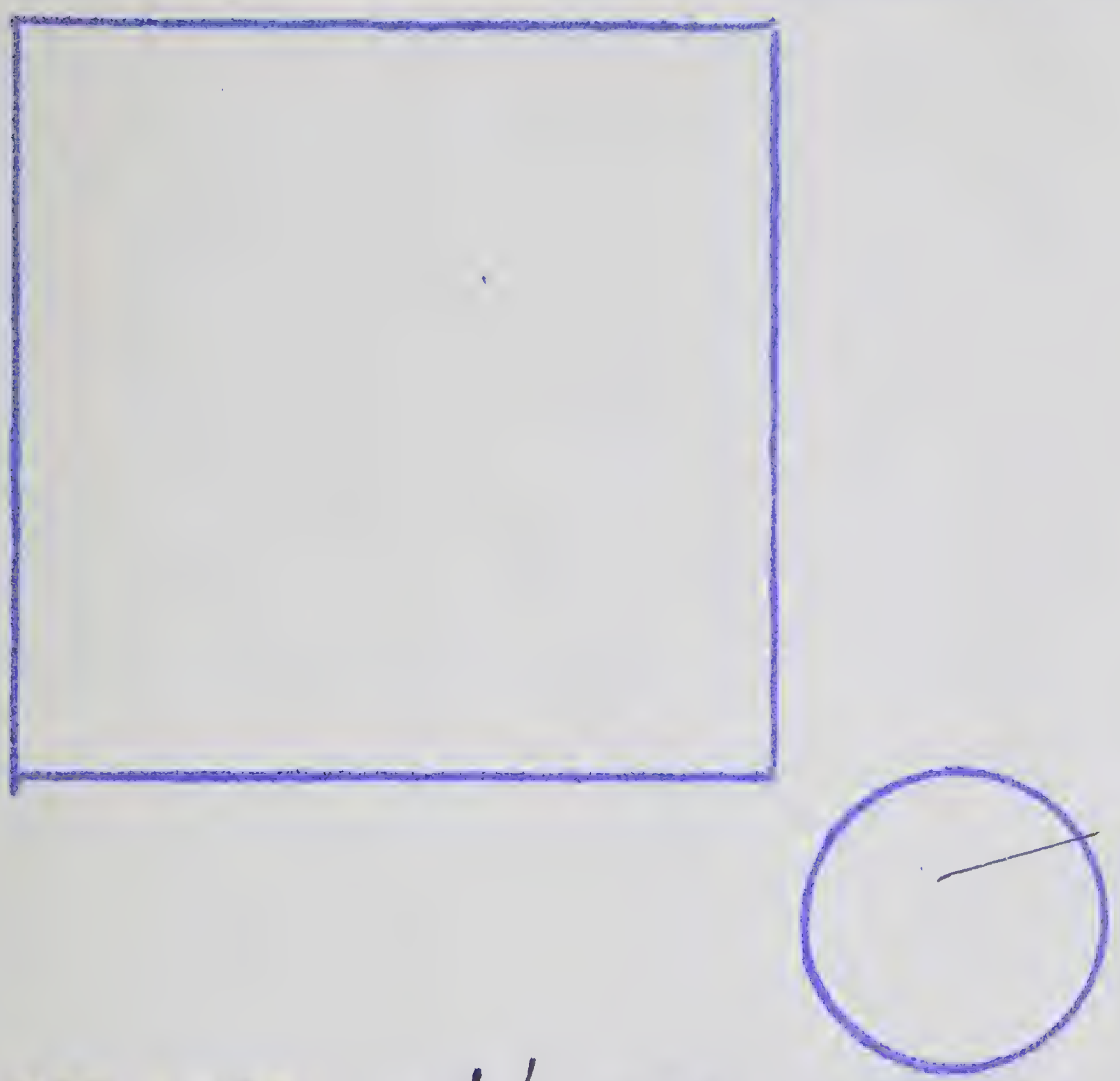
Remarks:

Hurd 1953
Point Barrow, Alaska

Date June 20

Meter Plot No. 3
marsh

Weather during count mostly clear + sunny



Can count: reset for season

Surface fauna: ±2 chrysomela adults; ±15 spiders, a few ±20 collembola noted on surface vegetation

1) + C

Berlese sample: 1 mm of collembola + mites; 1 tipulid larvae; ±6 small diptera larvae; 2 earthworms

1+)

Vegetation notes:

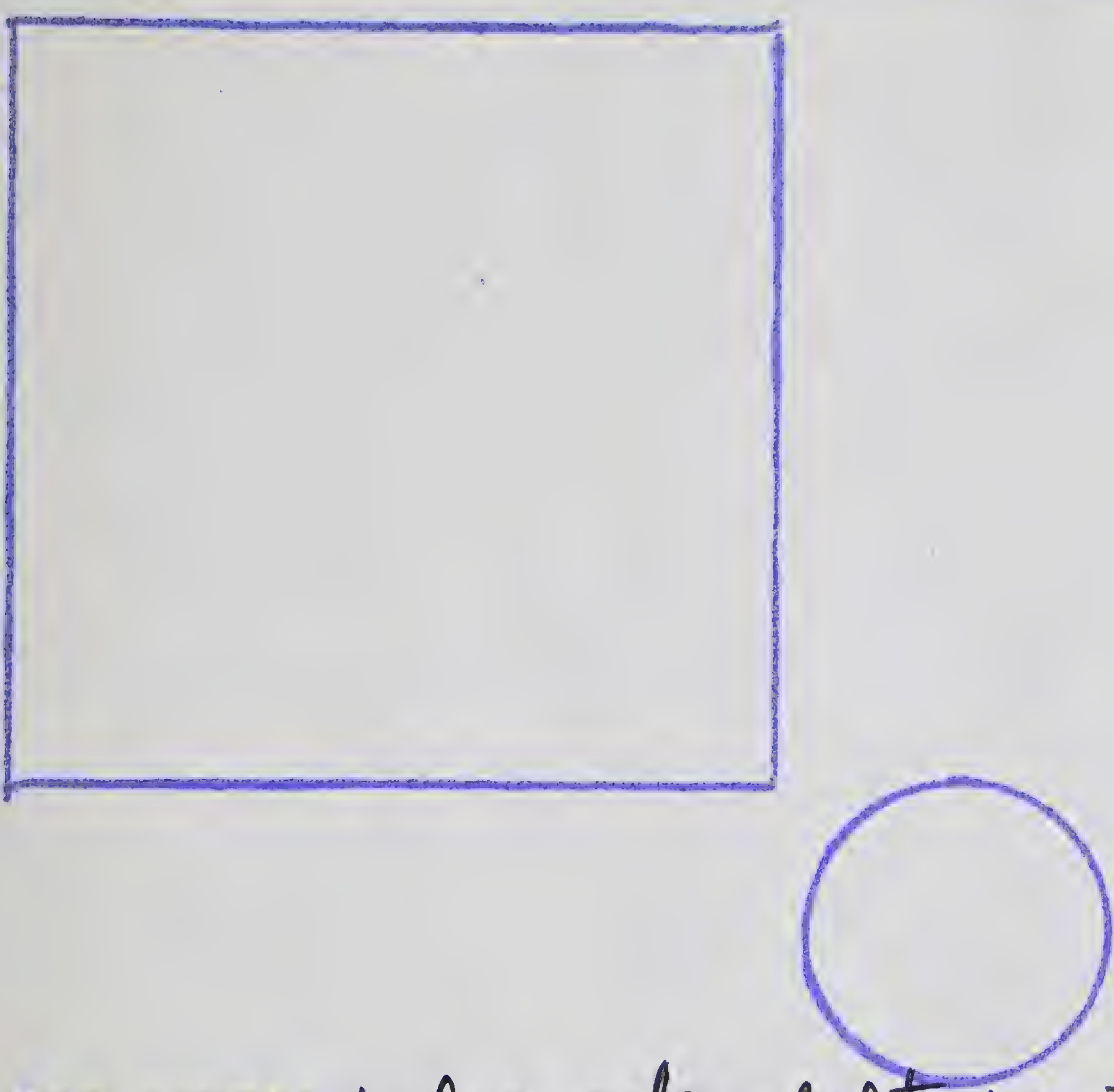
Remarks:

Hurd 1953
Point Barrow, Alaska

Date June 23

Meter Plot No. 1
Frost Scar

Weather during count overcast with rain



Can count: 1 *chrysomela* adult; 1 anthomyiid fly

Surface fauna: 1 spider and less than 1 anthomyiid fly per sq. meter.

Berlese sample:

Vegetation notes: *Petasites* buds prominent

Remarks:

Hurd 1953
Point Barrow, Alaska

Date June 23

Meter 2

Plot No. Intermediate

Weather during count overcast with rain

Can count: 1/2" of water

Surface fauna: 1 spider/sq. meter.

|

Berlese sample: 35 diptera larvae; (5 staphylinid adults all small species + 1 spider these mounted or vialed seperately); 14 mm of Collembola + mites including the 35 dip larvae alone plus 4 earthworms.

Vegetation notes:

14 + 1

Remarks:

Hurd 1953
Point Barrow, Alaska

Date June 23 Meter Plot No. 3
marsh

Weather during count overcast with rain

Can count: 3" water nothing observed in.

Surface fauna: 1 anthomyiid fly per sq. meter occasional spider.

Berlese sample:

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date June 26

Meter
Plot No. 1

Weather during count [illegible] [illegible] [illegible]
[illegible] in cont[illegible]

Can count: 1 ch[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible]

Surface fauna: [illegible]
[illegible]
[illegible]

7

Berlese sample: 6 mm of Collembola + mites
a few fly larvae also.

6 +

Vegetation notes:

Remarks:

Hurd 1955
Point Barrow, Alaska

Date June 26

Meter Plot No. 2 [illegible]

Weather during count clear & warm [illegible]
[illegible]

Can count: 1 [illegible] adult, 5 spiders, 4 staph. ±30 [illegible]

Surface fauna: ±6 [illegible] [illegible] ±4 spiders

10

Berlese sample: 11 mm of collembola + mites a few diptera larvae; 1 small spider, + 1 small staphylinid adult

1 + 2

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date June 26

Meter Plot No. [illegible]

Weather during count [illegible]
[illegible]

Can count: still not in operation

Surface fauna: [illegible]
[illegible]

18

Berlese sample: 4 mm of Collembola + mites

4

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date June 29

Meter Plot No. 1
Frost Scar

Weather during count overcast with light west wind

Can count: 4 staphylinids; ±20 collembola

Surface fauna: occasional Fungivorid, much less than 1/sq meter; occasional spider.

<1

Berlese sample: 7 mm of collembola + mites
3 earthworms.

7 + 3

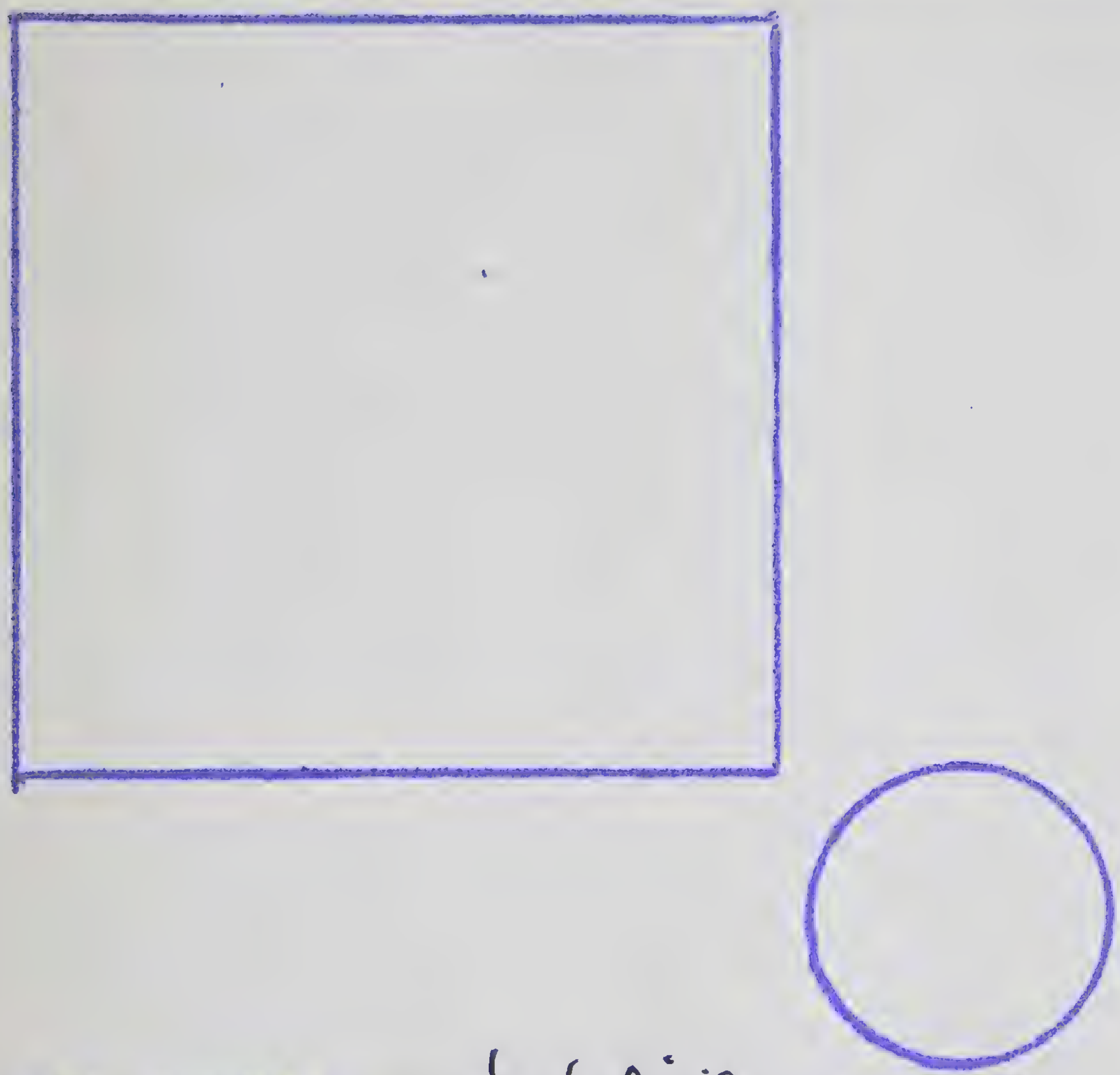
Vegetation notes:

Remarks:

Hurd 1953 Date June 29 Meter

Point Barrow, Alaska Plot No. 2 Intermediate

Weather during count overcast with light west wind



Can count: 3 staphylinids ; 1 spider ; ± 30 Collembola

Surface fauna: occasional midge + spider

4

Berlese sample: 6 mm of collembola + mites in vial 8 X 90 mm

6

Vegetation notes:

Remarks:

Hurd 1955
Point Barrow, Alaska

Date June 29

Meter Plot No: 3 marsh

Weather during count Overcast with light west wind

Can count: ±50-75 collembola

Surface fauna: occasional spider & anthomyiid fly.

Berlese sample: 10 collembola; 1 muscid fly larva

Vegetation notes:

Remarks:

Hurd 1953 Date July 2, 1953 Meter

Point Barrow, Alaska Plot No. 1 Frost Scar

Weather during count overcast wind 2-5 mph SE

Can count: 4 large staphylinids; 3 small ones; 2 cecidomyids.

Surface fauna: ±1 Fungivorid; occasional anthomyid ±4 midges

5

Berlese sample: 6 mm of Collembola + mites in vial 8X90 mm

6

Vegetation notes: 1st Petasites bloom noted

Remarks:

Hurd 1955
Point Barrow, Alaska

Date july 2

Meter Plot No. 2
Intermediate

Weather during count overcast with wind 2-5 m SE

Can count: 1 staphylinid ±10 collembola; 1 fungivorid

Surface fauna: ±10 midges; occasional anthomyiid
occasional fungivorid

10

Berlese sample: 5 mm of Collembola + mites.

5

Vegetation notes:

Remarks:

[illegible]

Point Barrow, Alaska

Date July 2

Meter Plot No. 3 marsh

Weather during count overcast with heavy rain wind ±2 mph S E

Can count: ±30 collembola; 1 chrysomela larva

Surface fauna: ±1 spider; ±4 midges; occasional anthomyiid.

5

Berlese sample: 3 mm of Collembola in vial 8 X 90 mm
2 large muscoid larvae.

3 + 2

Vegetation notes:

Remarks:

Hurd 1953 Date july 5 Meter
Point Barrow, Alaska Plot No 1

Frost Scar

Weather during count overcast light west wind. cold

Replicate can
1 *Chrysomela* ad
3 Fungivorids; 7 Sciarids 1 spider
Arctophila traps: empty!

Can count: 3 staphylinids; 2 large fungivorid adults; ±10 sciarid adults; 1 spider

Surface fauna: ±1 fungivorid, occasional spider; occasional anthomyiid; occasional Sciarid

Berlese sample:

Vegetation notes:

Remarks:

Hurd 1953 Date july 5 Meter

Point Barrow, Alaska Plot No. 2 Intermediate

Weather during count overcast with light W wind

cold

Can count: 15 sciarid adults; 3 large fungivorids

Surface fauna: ±5 Fungivorid; 1 anthomyid; ±2 midges (chironomids) + small species!; occasional spider.

Berlese sample: 14 mm of Collembola
3 large muscoid fly larvae.

19 15

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date July 5

Meter marsh Plot No. 3

Weather during count overcast light W wind cold

Can count: ±50 collembola

Surface fauna: no activity noted!

0

Berlese sample: 2 mm of collembola + mites
1 staphylinid adult.

2+1

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date *July 8*

Meter Plot No. *1*
Frost scar

Weather during count *light overcast with sunshine*
wind 5-8 mph from SW

Replicate can had 2 ad Chrysomela Ad; 3 fungivorids.

Arctophila traps empty!

Can count: *7 staphylinids of 2 species (4 + 3)*

Surface fauna: *± 2 fungivorids ; ± 1 chironomid adult*
No collembola or mites seen!

3

Berlese sample: *2 mm of collembola + mites*
1 small staphylinid adult + 1 earthworm.

2 + 2

Vegetation notes: *4 flowering stalks of Petasites present on this fifed plot.*

Remarks: *1 ♂ Longspur is all that was observed on ridge today.*

Hurd 1953
Point Barrow, Alaska

Date July 8, 1953 Meter
Plot No. 2

Weather during count: light overcast intermediate decreasing periods of sunlight wind 6-8 mph SW

Can count: 11 fungivorids; 8 chironomid adults; 3 sciarids; 1 ♂ Tipulid.

Surface fauna: ±4 ~~fungivorids~~ fungivorids; ±5 chironomid adults.

7

Berlese sample: 19 mm of Collembola & mites sample also contains annelids, 1 Chrysomela larva and 2 small staphylinid,

Vegetation notes:

19

Remarks:

Hurd 1953
Point Barrow, Alaska

Date July 8

Meter Plot No. 3 marsh

Weather during count light overcast sunny wind 5-8 mph

Can count: ±50 collembola ; 1 fungivorid

Surface fauna: ±1 fungivorid; ±3 chironomid adults.

4

Berlese sample: 2 mm of collembola + mites

2

Vegetation notes:

Remarks: 1 tipulid seen during entire count

Hurd 1953
Point Barrow, Alaska

Date July 11

Meter

Plot No. 1 Frost Scar

Weather during count overcast with a brief period of sunlight near beginning of count in Fixed plot Wind 2-5 W

Can count: 1 saldid; 3 staphylinids; 2 spiders

Surface fauna: ±6 fungivorids · ±4 chironomid adult occasional muscoid fly.

Berlese sample: 3 mm of collembola + mites.

3

Vegetation notes:

Remarks:

Hurd 1955
Point Barrow, Alaska

Date july 11

Meter Plot No. 2 Intermediate

Weather during count overcast with cold west wind 2-5 mph

Can count: 1 Tipulid adult; 6 Fungivorids; 3 spiders

Surface fauna: ±8 Fungivorids; ±8 chironomid adults; occasional tipulid, spider, & muscoid fly

16

Berlese sample: 12 mm of Collembola + mites

12

Vegetation notes:

Remarks:

Hurd 1955
Point Barrow, Alaska

Date july 11

Meter Plot No. 3
marsh

Weather during count overcast with cold west wind

Can count: 7 Tipulids; 1 carabid adult; ±50 collembola

Surface fauna: ±3 Fungivorids; occasional Tipulid + spider.

3

Berlese sample: 2 mm of Collembola + mites; 2 muscoid larvae

2 + 1

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date July 14

Meter
Plot No. 1
First Scan

Weather during count overcast with light N. wind

water traps in Arctophila pond head

Trap 1) 1 Dytiscid Ad

Trap 2) 3 Dytiscid adults + 1 Dytiscid larva.

Can count: 2 Tipulid adults - 3 fungivorids
1 Saldid adult ; 1 large sp. staphylinid

Surface fauna: ±6 muscoid flies; ±8 fungivorids
±5 chironomids.

11

Berlese sample: 1 mm of collembola + mites
1 earthworm

1 + 1

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date july 14.

Plot No. 2
Intermediate

Weather during count overcast with light Nath wind.

Can count: 1 Tipulid adult

Surface fauna: ±10 muscid flies; ±12 fungivorids (including Sciarids); ±14 chironomids mostly of small species.

36

Berlese sample: 11 mm of collembola + mites

11

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date July. 14

Meter

Plot No. 3 marsh

Weather during count overcast with slight N wind

Can count: 6 Tipulid adults

Surface fauna: ± 8 Fungivorids. occasional muscoid
±6 chironomids all small species.

11

Berlese sample: 3 mm of Collembola — + 1 large muscoid larva.

5 + 1

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date July 17

Meter Plot No. 1
First Scan

Weather during count Clear light NE wind

water traps in arctophila pond empty

Can count: 9 Tipulid ♂♂, 1 fungivorid; 1 staph; 1 saldid

Surface fauna: ±10 muscoids; ±8 fungivorids; ±1 anthomyiid; occasional tipulid, sciarid, cecidomyiid ichneumonid all below 1 per sq. meter per 15 minute count

19

2 mm of Collembola + mites

Berlese sample: ~~2 large muscoid larvae.~~
~~9 mm of Collembola — mites scarce!~~

2

Vegetation notes:

Remarks:

Hurd 1953 Date *July 17* Water
Point Barrow, Alaska Plot No. *2*
Intermediate
Weather during count *clear, light NE wind*

Can count: *11 Tipulid males of 2 spp; 1 spider*
3 fungivorids

Surface fauna: *±6 muscoid flies, ±12 fungivorids*
±10 Sciarids, ±1 anthomyiid; ±1 spider
±20 small chironomids

50

Berlese sample: *2 large muscoid larvae*
9 mm of Collembola + mites scarce

9 + 2

Vegetation notes:

Remarks:

Point Barrow, Alaska Date *July 17* Plot No. *3* *marsh*

Weather during count *Clear with light NE wind*

Can count: *7 small sp Tipulid ♂♂*

Surface fauna: *±1 Muscoid; ±3 Fungivorids, ±4 spiders; occasional tipulid ♂; occasional chironomid*

Berlese sample: *3 mm of Collembola. Mites scarce — 1 large muscoid larva*

3 + 1

Vegetation notes:

Remarks:

[illegible]
Point Barrow, Alaska

Date *July 20* Meter
Plot No *1* *Frost Scar*

Weather during count *overcast - light west wind cold*

Can count: *12 Tipulids; ±30 chironomids; 6 fungivorids; 2 spiders; 1 Saldid*

Surface fauna: *±15 muscoid flies; ±10 chironomids ±1 spider; ±2 fungivorids ±1 Tipulid*

23

Berlese sample: *2 mm of Collembola + mites plus a few (2 or 3) earthworms; 9 Staphs of both spp & 1 dipterous larva.*

2 + 1

Vegetation notes: *Petasites on ridge now in fruit + quite conspicuous*

Remarks: *bloom.*

[illegible]
Point Barrow, Alaska

Date *July 20*

Meter *2*

Plot No. *Intermediate*

Weather during count *overcast - light west w. cold*

Can count: *10 Tipulids; 3 spiders; ±100 chironomids; ±8 Fungivorids.*

Surface fauna:
±10 muscoids; ±2 spiders; ±15 sciarids; ±40 chironomids (small spp); ±6 Fungivorids; occasional anthomyiid

)3

Berlese sample: *9 mm of Collembola & mites 1 staphylinid; 1 spider 1 large muscoid larva.*

9 + 2

Vegetation notes:

Remarks:

[illegible] [illegible] july 20 Area: marsh
Point Barrow, Alaska Plot No 3

Weather during count ~~overcast~~ light

Can count: 5 Tipulids. ± 20 collembola
± 15 chironomids 1 spider

Surface fauna: ± 4 muscoids; ± 1 fungoid
± 4 spiders; occasional tipulid; ± 10
Chironomids

19

Berlese sample: 4 mm of collembola + mites 1
large staphylinid

4 + 1

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date July 23

Meter Plot No. 1
Frost Scar

Weather during count overcast with SW wind 5-10 mph cold

Can count: 9 Typulids; 1 staphylinid; 3 Fungivorids
3 spiders

Surface fauna: ±8 muscoids; ±1 fungivorid ±1 spider
occasional small sp. chironomid

10

Berlese sample: 2 mm of collembola + mite
& 2 small staphylinid adults

2 + 2

Vegetation notes:

Remarks:

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Hurd 1953
Point Barrow, Alaska

Date July 23

Meter 2

Plot No. Intermediate

Weather during count overcast with SW wind 5-10 mph

Can count: 3 Tipulids; 2 spiders

Surface fauna: ±10 muscoids; ±2 Fungivorids occasional sciarid; ±1 spider

15

Berlese sample: 23 mm of collembola + mites

23

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date July 23

Meter Plot No. 3 marsh

Weather during count overcast with wind 5-10 mph SW

Can count: 3 chrysomela larvae

Surface fauna: ± 2 muscoids ; ± 2 spiders
occasional fungivorid

4

Berlese sample: 2 mm of collembola + mites
+ several diptera larvae.

2+

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date July 26

Meter Plot No 1

Frost scar

Weather during count generally clear with occasional clouds light SE wind

Trap in arctophila pond had 4 and 3 Dytiscid adults respectively

Can count: empty

Surface fauna: ±2 muscoids · ±1 ichneumonid occasional fungivorid + chironomid ±2 spiders

5

Berlese sample:

Vegetation notes: shows frost damage

Remarks: no tipulids seen

Hurd 1953
Point Barrow, Alaska

Date July 26

Meter Plot No. 2
Intermediate

Weather during count generally clear with occasional clouds across sun light SE wind

Can count: 1 tipulid

Surface fauna: ± 3 muscoids; occasional chironomid; ± 1 ichneumonid ± 3 spiders

Berlese sample:

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date July 26

Meter Plot No. 3

Weather during count: generally clear, most occasional cloud across sun; light S E wind

Can count: 1 chrysomela larvae

Surface fauna: ± 20 chironomid adults that flew into area during counts + rested on vegetation - apparently from emerging swarms.

Berlese sample:

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date July 29

Meter Plot No. 1
First scan

Weather during count clear light E wind

Can count: 1 ichneumonid; 1 Tipulid

Surface fauna: ± 3 muscoids; ± 1 ichneumonid
a chironomid occasionally encountered.

4

Berlese sample:

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date July 29

Meter Plot No. 2 Intermediate

Weather during count clear light East W

Can count: 1 chrysomela larvae; 2 ichneumonids

Surface fauna: ±4 muscoids; ±2 ichneumonids occasional chironomid

6

Berlese sample:

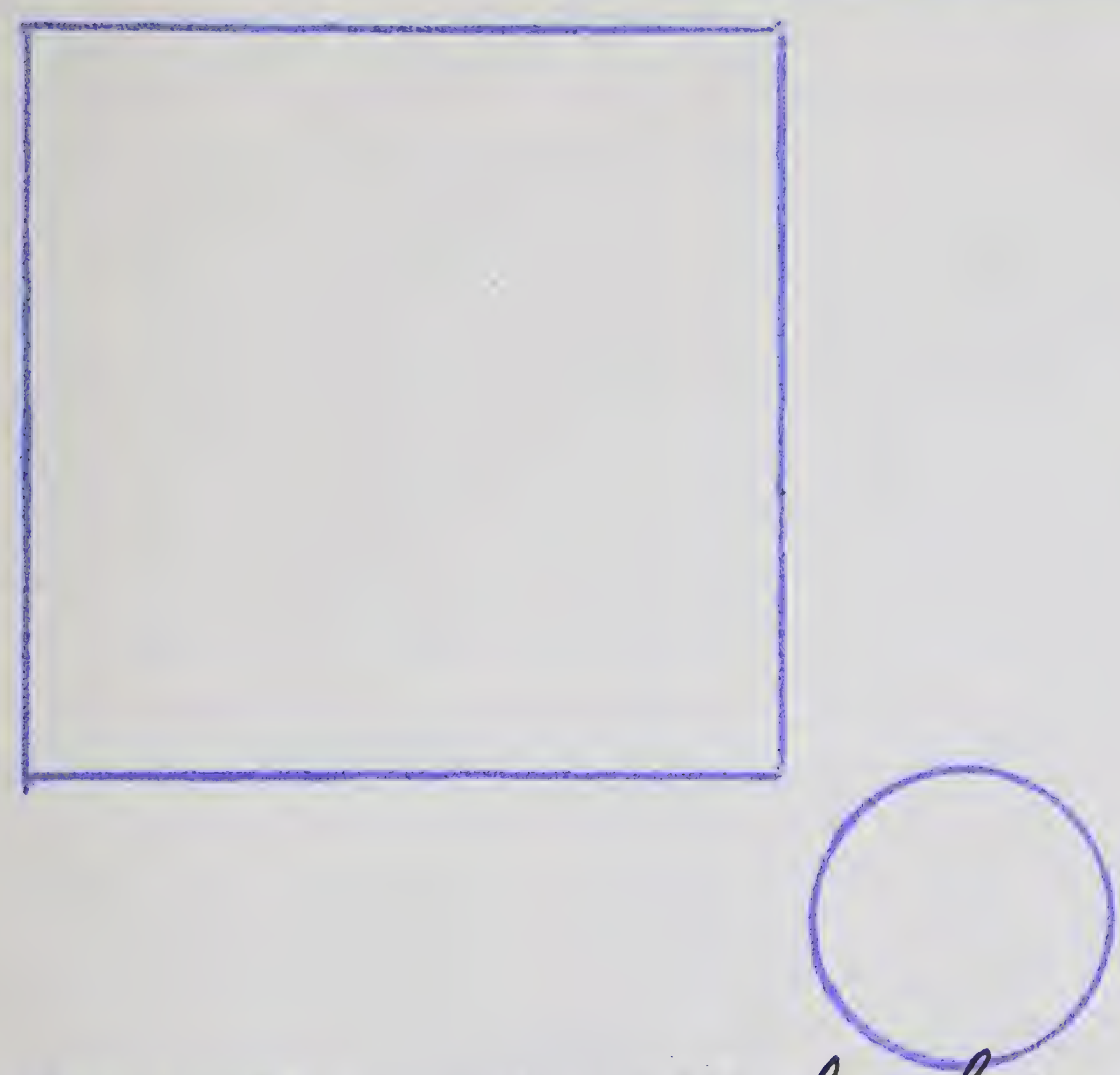
Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date July 29 Meter
Plot No. 3 Intermediate

Weather during count clear light E wind



Can count: 1 chrysomela larva

Surface fauna: occasional muscid + chironomid nothing on a per meter basis.

Berlese sample:

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date August 1

Meter Plot No. 1

Weather during count overcast wind variable Frost gear
but generally West

Can count: empty

Surface fauna: ±1 ichneumonid; muscoids
less than 1 per sq. meter/15 minutes
of observation.

Berlese sample:

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date *August 1* Meter Plot No. *2* *Intermediate*

Weather during count *overcast wind variable but generally west*

Can count: *empty*

Surface fauna: *±1 ichneumonid; muscoids less than 1 per sq. meter / 15 minutes. occasional spider + midge*

Berlese sample:

Vegetation notes:

Remarks:

[illegible]

Hurd 1953 Date August 1 Meter
Point Barrow, Alaska Plot No 3 marsh

Weather during count overcast - virtually no wind

Can count: empty

Surface fauna: nothing on a per meter basis - occasional chironomid.

0

Berlese sample:

Vegetation notes:

Remarks:

Hurd 1953
Point Barrow, Alaska

Date August 4

Meter Plot No. 1

First seen

Weather during count overcast c̄ few rifts

Can count: empty

Surface fauna: no activity noted

0

Berlese sample:

Vegetation notes: Senecio in full bloom

Remarks:

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Hurd 1953
Point Barrow, Alaska

Date August 4

Meter Plot No. 2 Intermediate

Weather during count overcast ē rifts occasionally

Can count: empty

Surface fauna: occasional muscid & ichneumonid but much less than 1 per sq. meter per 15 minutes of observation

<1

Berlese sample:

Vegetation notes: Petasites dehiscing and some (pistillate) in good bloom

Remarks:

Hurd 1953
Point Barrow, Alaska

Date *august 4*

Meter Plot No. *1* *marsh plot*

Weather during count *overcast c̄ rifts occasionally*

Can count: *empty*

Surface fauna: *no activity noted*

Berlese sample:

Vegetation notes:

Remarks:

Hurd, P.

1952 - 1953

Alaska

plant notes

Saxifraga

Pt. Barrow, Alaska, 1 mi S. growing on "moss" over gravel along old beach line.
August 16, 1952
Paul D Hurd, Jr.

Petasites

Pt. Barrow, Alaska, 1 mi S. growing at edge of central marsh – isolated plants growing near arctophila grass.
august 16, 1952
Paul S. Hurd, Jr.

Senecio

Pt. Barrow, Alaska, 1 mi S. on high tundra
growing in grass situation - ligulate
flowers & non ligulate ones grow in
segregated colonies.
August 16, 1952
Paul D Hurd, Jr.

Cardamine

Pt. Barrow, Alaska, 1 mi. S. growing at margins of small tundra pool in high tundra

August 16, 1952

Paul D. Hurd, Jr.

Saxifraga

Pt. Barrow, Alaska, 1 mi S. growing along old beach line in gravelly situation
August 16, 1952
Paul DeHurdy.

Potentilla

Pt. Barrow, Alaska, 1 mi S along old beach line
growing in gravel situation
august 16, 1952
Paul D Hurd Jr.

Cochlearia

Pt. Barrow, Alaska, behind Arctic Research Laboratory
Tops of high center polygon
August 16, 1952
Paul [illegible]d, Jr.

Hurd, P.

1952 - 1953

Alaska

Species Accounts: 1952
[incl. stomach contents]

Hurd
1952

Pt. Barrow, Alaska

Golden Plover Crops

July 31

♂ contents weigh 1.2 grams; consists of ± 20 Tipulids ± 15 *Chrysomela subsulcata* adults; 31 larva of unidentified beetle? Sample saved

♂ ± 50 larvae as above; ± 10 *Chrysomela subsulcata* 5 Tipulids.

August 13

± 10 green Lepidoptera larva 15 *Chrysomela subsulcata*; 2 adults of latter.

Hurd
1952

Pt. Barrow, Alaska

July 31

Baird Sandpiper - crop

3 ? # of Trichoptera adults almost completely digested.

Calidris bairdii

Calidris melanotos

Hurd
1952

Pt. Barrow, Alaska

Pisobia melanotos stomachs

July 6

♂ ±10 Tipulid pupae (large species); ±15 spiders.

♂ 25 chironomid larvae (red); ±100 chironomid ♂ adults. ±50 diptera pupae (anthomyid ?).

♂ 1.3 grams of Chironomid larvae (red) entire bulk except for remains of 3 Dytiscids probably 200-300 chironomid larvae.

July 9

♂ 21 large tipulid pupae - kind that are in bottom of tundra pools that are almost dry and covered with sphagnum moss. ±25 staphylinids; ±5 Carabids ±15 spiders

♀ ±25 large tipulid pupae; ±50 chironomid larvae (red); ±15 staphylinid adults; ±20 spiders.

♀ ±20 carabid adults; ±15 large tipulid pupae; ±25 spiders.

July 12

♂ ±300 Chironomid adults (& redworms); ±30 spiders

July 31

♂ ±30 Trichop. adults; ±2 Tipulid adults

♂ ±200 " " ; ±5 " "

Hurd
1952

Pt. Barrow, Alaska

Red-backed Sandpiper crops

August 13

- contents ground up, but obviously coleopteran and apparently chrysomela adults - rock content highest of any shore birds seen thus far

Calidris alpina

Phalaropus fulicaria

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Red Phalarope stomach analyses

June 5 ± 400 copepods; 1 adult Scopeuma vulpinum; 3 chironomid larvae

♂ —

♂ — ± 500 copepods; 1 syrphid pupae.

♂ — digested but obviously animal.

♂ — 12 large Tipulid larvae.

♀ — ± 100 red chironomid larvae.

♀ — ± 150 " " "

June 8

♀ — 9 very large Tipulid larvae

♀ — ± 30 caddis fly nymphs.

♀ — ± 50 " " "

♀ — ± 100 " " "

♂ ± 100 red chironomid large larvae; 1 small tipulid larvae

♂ 14 large (very) Tipulid larvae

♂ ± 100 caddis fly nymphs.

June 9

♂ digested.

♂ 39 medium Tipulid larvae

♂ 6 very large Tipulid larvae;

♂ 25 yellowish Tipulid larvae; 37 chironomid larvae

♂ 17 yellowish white Tipulid larvae 21 chironomid larvae

♂ 3 large Tipulid larvae; 14 yellowish Tipulid larvae; 12 chironomid larvae.

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Red Phalarope stomach analyses

June 9

♀ almost empty but has 5 yellowish Tipulid larvae; 1 large Tipulid larvae 3 chironomid larvae.

♀ 37 yellowish tipulid larvae ±50 chironomid larvae.

♂ 3 Tipulid larvae; remainder digested

♂ 7 yellowish Tipulid larvae; 15 chironomid larvae; remains of ±10 Chrysomela adults

♀ ±50 chironomid larvae (red)

♂ ?# of fresh water snail - too far crushed to estimate #

♂ ±75 chironomid larvae; 4 tipulid larvae

♀ ±50 red chironomid larvae.

♂ 3 large Tipulid larvae; 1 smaller yellow one; ±30 chironomid larvae (red)

♂ 27 chironomid larvae (red.).

June 10

♂ ±50 red chironomid larvae.

♂ ±300 red copepods

♂ ±100 caddis fly nymphs

♂ ±100 red chironomid larvae

♂ 4 large tipulid larvae; 3 spiders 11 copepods; remains of ?# of red chironomid larvae.

♀ many very small snail shell fragments ±10 spiders.

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Red Phalarope stomach Analyses-

June 10

♀ 4 red chironomid larvae; 1 large Tipulid larvae; 3 copepods; ?# of spiders; 3 Carex aquatilis seeds

♀ ±50 caddisfly larvae. different sp than those above; 1 spider.

♂ ?# of snails + forms bulk of contents; balance ?# of Trichoptera larvae.

June 11

- 5 very large tipulid larvae; remains of 5 of 6 others; 1 spider.
- ±300 copepods; 3 tipulid larvae.
- ±100 copepods; ±100 red chironomid larvae.
- ±100 red chironomid larvae; snail shell, remains ?#.
- ±100 caddis fly nymphs.
- ±50 chironomid larvae & ?# of snails.
- ±10 spiders; 4 very large cranefly larvae.
- 14 very large tipulid larvae; 1 spider
- 7 very large tipulid larvae; 3 caddis fly larvae.
- 9 very large tipulid larvae.
- 3 " " " " ; ±50 red chironomid larvae; snail shell fragments

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Red Phalarope Stomachs

June 11

- ±75 red chironomid larvae; 2 Carex aquatilis seeds; snail shell fragments.
- ±100 caddis fly nymphs.
- ± 50 red chironomid larvae; 3 spiders; 1 muscoid pupae, ±5 spiders.
- ± 50 caddis fly larvae.
- almost digested but remains of snail shells and red chironomid larvae evident.
- so completely digested no estimation of number possible - contents suggest caddis fly nymphs.
- bulk consists of snails - all remain though is pieces of the shells so difficult if not impossible to estimate #.
- ±100 red chironomid larvae
- ± 100 caddis fly nymphs
- 2 very long tipulid larvae rest of stomach contents digested.
- bulk consists of snails - all remains though in pieces - hard to estimate total #.

June 12

- empty
- ±500 copepods
- 12 large tipulid larvae
- 1 caddis fly larvae 3 spiders rest digested.

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Red Phalarope

June 12
- empty
- empty
- ?# snails; 27 caddis fly larvae.
- 2 large tipulid larvae; remainder digested.
- empty
- 1 snail; 1 tipulid pupae.
- ±200 copepods, caddis fly nymphs ±100
- 3 spiders; 11 red chironomid larvae.
- 10 spiders; rest digested
- ?# snails & compose bulk of stomach contents; 3 tipulid larvae.
- ?# snails; 5 red chironomid larvae; 1 carabid adult.
- ±10 carabid ~~larvae~~ adults; 15 staphylinids adults; 3 spiders.
- 11 very large tipulid larvae.
- ± 50 spiders.
- ±100 red chironomid larvae.
- 3 seeds of *Carex aquatilis*.
- completely digested
- ±200 copepods

June 13 empty.

June 15 ?# of Caddis fly nymphs; 11 small chironomid larvae; 1 carabid adult

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Red Phalarope Stomachs

June 15

- ±100 red chironomid larvae.
- ±150 " "
- ± 50 " " "
- ?# of snails; 3 red chironomid larvae.
- ?# of trichoptera nymphs.
- ?# of tipulid pupae - large sp.
- 1 snail; ±25 red chironomid larvae.
- 27 *carex aquatilis*
- 1 carabid adult; ±50 red chironomid larvae.
- empty
- 1 carabid adult; rest too far digested to be identified, but insectan.
- ±100 red chironomid larvae; 1 carabid ad.

June 14

- 2 tipulid larvae; ±25 small (?) chironomid larvae.
- ±100 small chironomid larvae.
- ± 10 muscoid pupae; nothing else
- ±25 red chironomid larvae.
- ±50 copepods; 3 muscoid pupae; ±100 small chironomid larvae.
- ±25 spiders.
- ±50 caddis fly nymphs; 4 tipulid larvae.
- 3 snail sheds. 10 red chironomid larvae. 1 *carex aquatilis* seed
- ±50 red chironomid larvae 1 tipulid larva.

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Red Phalarope Stomachs

June 14

- ±50 small chironomid larvae; 5 Carex aquatilis.
- ±20 spiders; 1 tipulid larvae;
- 3 tipulid; 3 spiders; 11 small chironomids.
- empty
- 1 large tipulid larvae; ±150 small chironomid larvae; 3 copepoda
- ±50 small chironomid larvae; 1 spider.
- ±50 chironomid larvae; 1 large tipulid larvae
- ±200 red chironomid larvae.
- empty
- ±200 small chironomid larvae
- ±50 Trichoptera larvae
- ±100 small chironomid larvae
- ±200 " " " ; 1 tipulid larvae
- ±100 red chironomid larvae
- digested, but grasses & lg chironomid larvae.

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Red Phalarope Stomachs

June 19
- ?# snails; ±50 red chironomid larvae.
- ±70 red chironomid larvae.
- 1 very large tipulid larvae; 11 red chironomid larvae.
- 8 red chironomid larvae; rest of contents beyond identification
- empty
- ±50 red chironomid larvae.
- ±100 " " "
- empty
- ?# of snails + that is all.

June 26

Central marsh
Beverage antennae
men

- 10 caddis fly cases; 2 large spiders; 1 large water mite; 1 chironomid pupae.
- ±10 spiders; ±20 chironomid larvae ±5 Trichoptera cases.
- ?# of snails; ±10 spiders; 2 water mites
- ±30 spiders; 3 midge pupae.
- ±50 spiders; 6 crane fly pupae; 11 dytiscids
- ±10 Dytiscid adults; ±5 spiders; ±20 Trichoptera cases; ±5 carabid adults.
- ±50 Trichoptera cases.
- ±10 spiders; ±10 Trichoptera cases; 1 large tipulid pupae
- ±5 spiders; ±20 Trichoptera cases; 1 snail

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Red Phalarope stomachs

July

- 1 adult chrysomela subsulcata; 3 spiders; ±100 chironomid adults small to large sized species, the latter predominating; 3 Dytiscid adults
- empty
- digested beyond identification
- ±50 all large sp. of chironomid.

July

- ±80 chironomid adults medium to large sized species. 1 spider

July

- 5 tipulid adults with eggs.
- ±100 chironomid adults large sp.
- ±75 " " mostly large species.
- ±100 chironomid adults mostly large sp.
- empty.

July 16

±50 chironomid adults; 1 Tipulid adult.

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Red Phalaropes

July 15

imm	— ±75	adult	chironomids	large	spp	mostly
sf	— ±50	adult	chironomids	"	"	"
AACS	— ±50	"	"	"	"	"
sw corner	— ±25	"	"	"	"	"
c. marsh	— ±50	"	"	"	"	"
↓	— ±75	"	"	"	"	"
	— ±100	"	"	"	"	"
	— ±50	"	"	"	"	"
	— ±75	"	"	"	"	"
	— ±50	"	"	"	"	"
	— ±75	"	"	"	"	"
	— ±75	"	"	"	"	"
	— ±75	"	"	"	"	"
	— ±50	"	"	"	"	"
	— ±25	"	"	"	"	"

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Red Phalarope Stomachs

June 26

- ± 20 spiders; rest of contents not identifiable digested too far.
- ± 30 spiders.
- ± 20 " ; 1 large tipulid pupae
- ± 15 " ; 6 chironomids larvae (red).
- ± 30 "
- ± 20 " ; 2 dytiscid adults
- ± 25 " ; 3 carex aquatilis seed
- 2 large red water mite ± 5 spiders, rest of contents beyond identification.

July 4

- ± 15 spiders; 3 Dytiscids; 1 anthomyiid
- ± 10 dytiscids, ± 5 spiders

July 6

16 Phalaropes from shore of Elson Lagoon all had ?# of "fairy shrimp" (= ~~[illegible]~~ amphipod & mysid. det. by John Mohr, U.S.C. contents beyond quantitative estimate.

July 23

- ± 200 green chironomid adults
- ± 150 " " "
- ± 100 green chironomid adults; ± 25 black " " of about same size.
- ± 200 green chironomid adults
- " " " "

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Red Phalarope Stomachs

July 23

- ±150 green chironomid adults; 1 dytiscid adult
- ±200 green chironomid adults; 1 spider; 2 Dytiscid adults
- ±180 green chironomid adults; 1 large water mite 2 snails
- ±100 green chironomids; 2 spiders 1 chrysomele larva.
- ±150 green chironomid adults
  ±10 black " "
- ±200 green chironomid adults
  1 spider
- ±300 green chironomid adults
  2 spiders
- ±200 green chironomid adults
  1 dytiscid adult
- ±150 green chironomid adults
  2 spiders
- ±100 green chironomid adults; 1 dytiscid adult
- ±150 green chironomid adults
  2 spiders; 1 snail.

Aug 3

- 1 muscoid fly; 1 ichneumonid
  ±5 spiders; ±50 chironomid larvae (next years crop)

Aug
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Red Phalarope

aug 3

- ± 75 chironomid larvae and
- ± 100 " " "
- ± 50 " " "
- ± 75 " " "
- ± 50 " " "
- empty
- "
- ± 25 " " "
- ± 30 " " " ; 1 dytiscid
- ± 50 " " "
- ± 100 " " "

Phalaropus
fulicaria

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June 18 Red Phalarope Stomachs

♂ mostly ground up Trichoptera larvae.
♂ all Diptera (Head incomplete series) ± 20
♂ ± 50 chironomid larvae (3 red) ✓
♂ ± 5 " " ✓
♂ 1 chironomid larvae ✓
♂ ±30 " " ✓
♂ Chrysomelids (= Chrysomela subsulcata) ±10; 1 Carabid Ad
♂ ±30 chironomid larvae ✓
♂ no discernible insect material
♂ Chrysomelid wing fragments
♂ Tipulid-like diptera larvae ±10
♂ empty
♂ chrysomelid wing fragments, ± 3 undetermined diptera larvae (Tipulidae)
♂ Tipulid-like larvae 5; Trichoptera larvae ±10
♂ " " " ±10; 10? # of Chironomid larvae ✓ carabid wings of 1 individual
♂ Some Coleoptera + Diptera fragments
♂ Chironomid + Tipulid-like larvae ±30 ½ ✓
♀ Carabid wing fragments of sp. nr. Amara (many) a few chrysomelid wing fragments
♀ empty
♀ ±100 chironomid larvae (some red) ✓
♀ many carabid wing fragments; a few chrysomelid wing fragments; ±10 chironomid larvae.

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June 19 Red Phalarope Stomachs

♂ wing + leg fragments of chrysomelid + carabids constitute stomach contents.

♂ wing + leg fragments of chrysomelid & carabid

✓ ±50 chironomid larvae, these constitute about 85% bulk of stomach contents; a few sprigs of grass leaves and 5 Carex aquatilis seeds

♂✓ 50-75 chironomid larvae (red); chrysomelid fragments

♂ ±50% Trichoptera larvae, ±50% (40) chironomid larvae; 10 Carex aquatilis seeds

♂ Large red mite 20; earthworms 11; remainder of contents (75% bulk) are Trichoptera larvae

♂ 15 Trichoptera larvae (this is the bulk of contents); a few chrysomelid fragments present

♂ empty

♂ 25 seeds of Carex aquatilis make up principle part contents; a few scattered fragments of a coleopteran - probably Dytiscid.

♂ 3 snail shells; balance almost entirely had incomplete series of dipteran larvae (Tipulid)

♂ ±50 chironomid larvae

♂ empty

♂ Preponderately chironomid (110) larvae (red) a few beetle fragments

♀ Bulk consists of Chrysomelid fragments; a few Carabid & Dytiscid remains present

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June 19. Red Phalarope Stomachs ≠ 40

✓♀ 50% Trichoptera larvae + 50% chironomid larvae

♀ 6 earthworms; ?# chironomid larvae + beetle fragments

♀ chironomid larvae (red) constitute 85% bulk; a few chrysomelid remains ≠ 50

June 20

♂ 5 Tipulid-like larvae balance of stomach consists of chrysomelid fragments; no plant matter

✓♂ 1 Tipulid-like larvae; ±100 chironomid larvae (red); a few fragment of Coleoptera probably a Dytiscid; a few dead grass leaves

✓♂ 5 caddis fly larvae; 5 chironomid larvae dead grass leaves

✓♂ ±25 chironomid larvae

✓♂ ±20 " " ; 1 Trichoptera larvae

♂ empty

✓♂ ±10 chironomid larvae; 3 Tipulid like larvae several Trichoptera larvae

♂ contents almost completely digested - obviously animal & most probably chironomid larvae

♂ ±30 Tipulid-like larvae

♂ ±20 caddis fly larvae

♂ ±25 Tipulid-like larvae ±10 chironomid larvae

♂ empty

✓♂ ±10 Tipulid like larvae; ±20 chironomid larvae ?# of caddis fly larvae

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June 20 — Red Phalarope Stomachs

♂ ±20 Trichoptera larvae
♀ Trichoptera remains are all that is evident
♀ " " " "

June 21 ♀ 5 Trichoptera larvae ; ±30✓ Chironomid larvae
♀ Fragments of Trichoptera larvae; snail shell fragments
♀ Trichoptera + chironomid larval remains, quantity probably 5 + 30✓ respectively; 1 Tipulid-like larva ; also snail shell fragments
♀ ±50 chironomid larvae ; ± 5 Trichoptera larvae
♀ ±75 " " ; ± 5 " " ;
±10 Tipulid like larvae; 11 Carex aquatilis seeds
♀ ±10 Trichoptera larvae; ±25✓ chironomid larvae
♂ ± 50 chironomid larvae; 5 Tipulid-like larvae remains of 1? Trichoptera larvae + 1 beetle (Dytiscid?)
♂ Trichopterous + Chironomid larval remains evident but not countable. ✓ ~~cnt cnt~~
♂ ±20 Trichoptera larvae; ±10✓ chironomid larvae
♂ ±25 ~~Th~~ Trichoptera larvae; ±10✓ chironomids
♂ ± 75✓ chironomid larvae
♂ ±10 Trichoptera larvae ; ±10✓ chironomid larvae
♂ ±75✓ Chironomid larvae; ±25 Tipulid-like larvae
♂ ±50✓ " " ±5 Tipulid-like larvae;
± 5 Trichoptera larvae
♂ ±10 chironomid larvae; 5 Trichoptera larvae

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June 21 Red Phalarope stomachs

♂ ± 50 Chironomid larvae; 1 Trichoptera larva; remains of snail shell

♂ empty

♂ 1 *Carex aquatilis* seed; ± 15 Trichoptera larvae; ?# of Chironomid larvae

♀ indeterminable number of Trichoptera larval remains

♀ ± 50 Chironomid larvae; ± 5 Trichoptera larvae

♀ ± 50 chironomid larvae; ± 5 Trichoptera larvae

♀ ?# of Trichoptera larval remains

♀ " " " "

June 24

♂	± 20 Trichoptera larvae;		10 chironomid larvae		
♂	± 25 "	"	?#	"	"
♂	± 25 "	"	?#	"	"
♂	± 15 "	"	?#	"	"
♀	?# "	"	?#	"	"
♀	?# "	"	± 10	"	"
♀	± 5 "	"	?#	"	"; 7

large diptera larvae similar to one you are rearing from funnel traps in tundra pool on sedge area; conceivably could be a large Tipulid larvae + is on basis of reared specimen (VII-5-52)

♀ ± 10 Trichoptera larvae; ± 15 Chironomid larvae; 3 large diptera-larvae as above.

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June 26 Red Phalarope - stomachs

♂ 10 Trichoptera larvae; 8 chironomid larvae (red).
♂ 6 " " ; 2 carex *aquatilis* seeds
♂ 15 " " ; nothing else
♂ 12 " " ; 16 chironomid larvae (red); 2 snails saved
♂ 5 " " ; ±10 " " " ; 1 carabid *amara*?
♂ ±2 " " ; 25 chironomid larvae (red); ±2 "
♂ well digested but remains suggest high preponderance of Trich. larvae
♂ 42 Trichoptera larvae; das ist alles (Trichoptera sample saved)
♂ well digested only remains of legs + parts of head of Trichoptera larvae
♂ " " " " " " " " " "
and great mass of these
♂ almost empty some Trichoptera larval remains; 2 *carex aquatilis* seeds.
♂ Heavy in trichoptera larval remains; about 15 chironomid (red) larvae just eaten apparently.
♀ 30 Trichoptera larvae; 1 red mite; ±15 chironomid larvae.
♀ 4 snails (saved) and remains of several others; ± 20 Trichoptera larvae; 1 Ad Dytiscid (saved); several (10) chironomid larvae (red) also an indeterminable # of chewed up Dytiscid Adults.
♀ digested, but evident remains of Trichoptera larvae and some Dytiscid adult remains; chironomid larvae not distinguishable if present; many grass roots probably acquired in search for "bugs".
♀ 26 Trichoptera larvae; nothing else identifiable.
♀ ?# " " but probably in neighborhood of 15; no discernible chironomid remains; snail shell fragments present.

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june 26

Red Phalarope stomachs

♀ ±20 snail shells intact mes sand remainder is grass root fragments – ?picked up with snails?

♀ 23 red mites (saved); ±75 Chironomid larvae (red); 1 elytron of Dytiscid.

♀ mostly ground up + unevident, friable; 1 elytron of Carabid present; remains are suggestive of Trich larvae.

♀ ground to bits; snail shell fragments evident - apparent remains of Trichoptera larvae in form of fragmented head + legs

♀ remains of Trichoptera larvae ±20; 2 adult Dytiscids probably 20 chironomid larvae.

♀ badly ground up contents looks like remains of mostly Trichoptera; a few snail shell fragments evident.

♀ ground up; fragments of snail shells + Trichoptera larvae present + seems to constitute bulk.

♀ snail shell fragments of probably ±10 shells; chironomid larvae (red) ±20; Trichoptera ±10

♀ almost empty.

♀ ±30 Chironomid larvae (red); 11 Trichoptera larvae a few grass seeds (sp.?). (*Luzula* sp.)

♀ essentially as last entry, but no seeds evident.

june 27

♀ 10 ~~[illegible]~~ diptera larvae (Tipulidae); 50 chironomid larvae (red); 15 Trichoptera larvae; [illegible] unknown diptera [illegible] saved for identification.

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Red Phalarope stomachs

June 27

♀ Trichoptera larvae probably remains 30; nothing else identifiable.

♀ ±10 Trichoptera larvae; 3 *Carex aquatilis* seeds

♀ 17 Trichoptera larvae; probably 30 chironomid (red) larvae.

♀ badly ground up but several (7) heads of larval Trichops remain.

♀ 1 "gigantic diptera larva, kind being reared (= Tipulid larva) remains of Trichoptera larvae + chironomid larvae

♀ Snail shell remains; many ±40 chironomid (red) larvae.

♀ ±75 chironomid larvae (red); 6 Trichoptera larvae; 1 dytiscid Adult.

♀ ±25 chironomid larvae (red); ground up remains of Trichoptera larvae (this is major contents of stomach); 2 Ad Dytiscid beetles

♀ 10 Trichoptera larvae; 35 chironomids larvae (red); 1 *carex aquatilis* seeds.

♂ empty

♂ 6 Trichoptera larvae; ±10 remains of chironomid larvae

♂ ±25 chironomid larvae; 5 Trichoptera larvae.

♂ empty

♂ ±30 chironomid larvae (red); 2 Ad Dytiscids; 1 Trichoptera larva

♂ ±100 " " (red); remains of 1 dytiscid Ad
3 Trichoptera larvae

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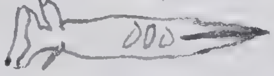
June 29 Red Phalarope stomachs

♀ ±50 chironomid larvae; ±25 Trichoptera larvae
♀ ±5 red ticks; numerous Trichoptera larval remains
♂ 3 red ticks; 15 Trichoptera larvae; 30 chironomid larvae
♂ snail shell fragments; 25 chironomid larvae
♂ 1 large " " ; 1 Dolichopodid larvae; ±10 chironomid larvae
♂ ±50 chironomid larvae; Trichoptera larval remains
♂ ±100 " " ; 5 *Carex aquatilis* seeds

June 30

♀ ±75 chironomid larvae; ±10 Trichoptera larvae
♀ ±50 " " ; 5 " "
♀ ±150 " " ; 1 " "
♀ 5 carabid adults; 1 snail shell; ±20 chironomid larvae; 1 anthomyiid pupae; ±15 Trichoptera larval remain
♀ Snail shell remains; rest of stomach contents macerated beyond identification
♀ pupal remains of unidentified diptera probably 30 in all ?.
♀ ±15 larvae of diptera (=  tipulid) nothing else
♀ ±50 chironomid larvae; 20 Trichoptera larvae
♀ ±100 " " ; nothing else
♀ ±150 " " ; 5 Trichoptera larvae
♀ ±100 " " ; 2 *Carex aquatilis* seeds
♀ ±25 " " ; 2 red mites
♀ ±4 carabid adult remains
♂ ±30 chironomid larvae
♂ ±150 "
♂ ±100 " " ; ±20 pupae of these chironomids?

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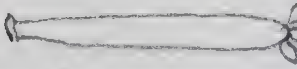
June 30 Red Phalarope stomachs

♂ ±10  diptera remains—saved for identification purposes (Tipulidae?)

♂ ±20 chironomid larvae; macerated remains of beetle or Trichoptera chitin.

July 1

♀ ±100 chironomid larvae (all red)

♀ ±10 carabid adult remains; ±15 Trichoptera remains of larvae (heads only); ±10 chironomid larvae (red)

♀ ±100 chironomid larvae; ±20 spiders; 2 seeds of Carex aquatilis

♀ ±75 Chironomid larvae (red); 1 carabid ad; 1 Dytiscid adult

♀ ±100 chironomid larvae; 1 carabid ad.

♀ completely digested

♀ ±200 chironomid larvae

♀ ±100 " " ; 1 carabid adult

♀ ±150 spiders; carabid remains ±5

July 2

♂ 1 Chrysomela subsulcata mutant; 3 carabids like those mounted in June; ±10 collembola (large (gray)) 5 spiders, remains of another Chrysomela subsulcata; wings of 1 Tenthredinid; remains of 1? snail shell; 15 chironomid larvae + remains of emaciated diptera pupae (chironomid?) ±25. —1 saved for identification; 1 red mite saved for identification also 1 collembola saved

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Pt. Barrow, Alaska

July 2 — Red Phalarope Stomachs

♂ chironomid pupae ± 10 (constricted type - see last ♂ entry; 15 chironomid larvae (red); snail shell fragments probably of 5 or more shells

♀ ±30 Copepods - red ones; remains of 1 Eretmoptera like chironomid rest of contents macerated beyond identification, but animal.

♀ 21 seeds (= Ranunculus pallasii); snail shells probably ±10; ±150 chironomid larvae (red)

♀ 9 red mites; ± 50 Collembola (large gray ones) ± 50 chironomid larvae

♀ carabid beetles Ad ± 7; chironomid pupae (red?) ± 50; chironomid larvae (red) 10

♀ Snail shells probably 25-30 badly ground up fragments; chironomid larvae (red) ± 25; chironomid pupae (red?) ± 10.

July 5

♂ ±25 red mites; 6 carabid adults; ± 20 chironomid larvae (red). ± 15 spiders

♂ chironomid larvae (red) ±50; chironomid ~~larvae~~ adults of same red larvae ±100; 3 caddis fly nymphs; carabid adults ± 5; 1 Tipulid larva (large); ± 5 spiders

♂ ±150 spiders; 10 chironomid larvae (red); chironomid adults (red) ±25; carabid adults ±10

♂ ±100 spiders; ± 20 carabid adults; chironomid larvae ± 5.

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July 5 — Red Phalarope Stomachs

♀ empty (small bird 38 grams)
♀ ±150 chironomid larvae (red); 1 carabid Ad.
♀ ±75 spiders; chironomid larvae (red) ±20, adults of same ±30.
♀ Dytiscid larvae ±30; Tipulid larvae 14; spiders ±50; chironomid larvae ±20, adults of same ±15.

July 9

♀ ±50 spiders; 2 carabids; ±75 Plecoptera
♀ ±100 plecoptera (Nemouridae) nymphs - specimen saved - total bulk.
♀ ±150 plecoptera nymphs
♀ ±200 plecoptera nymphs
♀ ±25 spiders; ±75 tipulid larvae
♀ ±200 plecoptera nymphs, 3 chironomid larvae
♀ ±150 plecoptera nymphs, 2 tipulid pupae
♂ ±200 plecoptera nymphs; 6 staphylinids, 2 carabid Ad
♂ ±10 spiders; ±75 Plecoptera nymphs; ±20 Carabid Adults.
♂ ±200 plecoptera nymphs, 1 Carabid Ad. 1 Chrysomela subsulcata adult.
♂ many snail shell fragments; ±100 plecoptera nymphs; ±10 spiders.
♂ ±300 plecoptera nymphs; 20 spiders.
♂ ±100 plecoptera nymphs; 1 dytiscid; 3 staphylinids.

Herd
1952

R. Barrow, 4/25/52

July 9 Red Phalarope Stomachs

♂ ± [illegible] plecoptera nymphs; 5 spiders, 3 Carabid
♂ ± 300 " " ; ± 10 spiders
♂ ± 500 " " ± 25 " 3 carabids
♂ ± 200 " " ± 15 " [illegible]
♂ ± 150 " " ± 10 ; spiders 1
Dytiscid Adult
♂ ± 300 plecoptera nymphs ± 5 spiders ; ± 10 carabids,
3 staphylinids

July 10

♂ ± 150 plecoptera nymphs; ± 20 adult chironomids
of yellow-black thorax type.
♂ ± 100 chironomid larvae (red); ± 30 spiders
♂ ± 50 carabid adults, ± 10 Staphylinids;
± 75 spiders
♂ ± 50 plecoptera nymphs; ± 20 spiders ± 10
carabids; ± 5 staphylinids
♂ ± 100 plecoptera nymphs; ± 5 spiders; ± 10
Carabids; 1 staphylinid; 1 red chironomid
larva.

July 12

♂ ± 30 spiders; Tipulid pupal cases ± 10; ± 50 tipulid
eggs
♂ ± 30 spiders; ± 5 Tipulids; ± 75 chironomid adults
♀ ± 5 spiders; ± 10 Tipulids; ± 100 "
♀ completely digested

July 13

♀ ± 25 Tipulids & their eggs (± 50).

Hurd
1952

Pt. Barrow, Alaska

Red Phalarope Stomachs

July 13

♀ ±50 Plecoptera nymphs; ±10 Tipulid adults + eggs (±50); ±10 spiders; ±100 Chironomid adults

♂ Plecoptera nymphs ±75; ±20 spiders ±5 Tipulid Adults.

♂ ±200 chironomid adults (yellow + black thorax sp.) ±25 spiders; ±100 plecoptera nymphs

♂ ±200 Chironomid adults (from red worms); ±75 plecoptera nymphs; ±10 spiders; 5 carabid adults.

July 12

LLE
♂ ±50 Tipulids + eggs; ±150 adult Chironomidae
♂ ±30 Tipulids + eggs; ±200 " " ; ±10 spiders

July 14

From Barrow Village
♂ digested but evidence of midges + Tipulids.
♂ ±20 Tipulids + eggs; ±100 adult chironomids 10 carex aquatilis seeds.
♂ ±40 Tipulids; ±200 chironomid adults
♂ ±75 Plecoptera; ±10 Tipulids; ±150 chironomid adults
♂ ±200 plecoptera nymphs; ±50 Tipulids, ±100 chironomid adults (many black + yellow sp.) ±10 spiders

July 15

2 mi E ARL
♂ ±15 chironomids adults yellow + black sp. ±20 Tipulids + eggs.
♂ ±50 chironomid adults (green-brown with black vittae) and ±25 " " (yellow " " ")
±5 Tipulids.

Hurd
1952

Pt. Barrow, Alaska

July 15 — Red Phalarope - Stomachs

all 3 mi E ARL + shot in afternoon

♂ virtually completely digested but chironomid + Tipulid wings evident.

♂ ±200 chironomid adults (green with black vittae); ±20 Tipulids + eggs; 3 Ranunculus pallasii.

♂ ±250 chironomid adult (green with black vittae); ±5 Tipulids; 3 Carex aquatilis seeds

♂ ±200 chironomid adults (both yellow + all black chironomid spp.; ±10 Tipulid + eggs.

♂ almost digested except for numerous Tipulid eggs.

♂ ±150 chironomid adult (green sp.) and ±10 Tipulid, + eggs.

♂ ± 75 chironomid adults (green sp) and probably 5 tipulids + eggs.

♂ ±200 chironomids (green sp) and ±10 Tipulids + eggs.

♂ ±300 chironomid adults (green + black sp) ±10 Tipulids + eggs.

♂ almost digested but remains of chironomid + Tipulid adults

♂ as last entry

♂ ±400 chironomid ~~larvae~~ adults both green + black spp ±15 Tipulids

♂ ±75 chironomid adults, 1 Tipulid

♂ ±250 " adults mostly black sp. and ±10 Tipulids with eggs

Hurd
1952

Pt. Barrow, Alaska

Red Phalarope Stomachs

July 15

all behind ARL to E about 2 mi. shot in afternoon

♂ ± 350 Chironomid adults mostly ~~yellow~~ green sp
± 5 Tipulid adults.
♂ almost completely digested but remains of Chironomid adults + Tipulid adults.
♂ ± 150 green sp of Chironomid adults, ± 5 Tipulids
♂ ± 250 " " " " " ; ± 2 Tipulids
♂ ± 300 " " " " " ; ± 10 Tipulids + their eggs.
♂ completely digested
♀ ± 200 chironomid adult (green sp) ; ± 5 Tipulids and 21 pebbles - first seen in any stomach of Red Phalarope thus far studied this year.
♀ ± 300 chironomid adults (green sp), ± 10 Tipulids
1 Carex aquatilis seed
♀ ± 350 Chironomid adults ("); ± 5 Tipulids.
♀ ± 150 " " " ± 10 Tipulids

July 15

♂ ± 100 plecoptera nymphs ; 1 spider
♂ ± 10 Tipulid adults + eggs ; ± 50 plecoptera nymphs
♂ ± 5 Tipulid adults ; ± 75 plecoptera nymphs
♂ ± 100 plecoptera nymphs.
♂ ± 75 " " ; ± 10 Tipulid adults
♂ ± 50 " " ; ± 10 Tipulid adults
♂ ± 75 " " ; ± 5 Tipulid adults
♂ ± 50 " " ; ± 5 Tipulid adults.
1 spider

Hurd
1952

N. Barrow, Alaska

July 16 — Red Phalarope - Stomachs

♂ 5 Carabids; ±15 Tipulids; ±100 Chironomid adults; ±5 spiders

♂ almost digested but remains of both Chironomid + Tipulid adults, estimates not possible

♂ ±25 Tipulid adults ±250 Chironomid adults; ±10 spiders

♂ ±30 Tipulid adults + ±150 of their eggs; Chironomid adults ±300.

♂ ±30 Tipulid adults + eggs, Chironomid adults ±250; ±5 spiders, ±3 Carabids.

♂ ±350 Chironomid adults (many green ones) ±20 Tipulid adults + eggs.

♂ ±50 Tipulid adults; ±200 Chironomid adults.

[illegible] bird run [illegible] weasel → ♂ ±30 Tipulid adults ±50 Chironomid adults

♂ ±20 " " ±150 " "

♂ ±30 " " ±250 " "

♂ ±25 " " ±300 " "

♀ ±15 " " ±100 " "

♀ ±5 " " ±350 " " mostly green sp.

July 20

♂ Tipulid adults ±20 + eggs therefrom on basis of eggs at least 2 pr of Tipulids

♂ ±25 Tipulid adults + eggs; ±10 Chironomid adults

Hurd
1952

Pt. Barrow, Alaska

July 20. Red Phalarope — Stomachs.

♂ ±10 Tipulid adults; 1 spider

♂ ±15 " "

♂ ±30 " "; ±50 chironomid adults. black spp.

♂ ±25 Tipulid adults; ±25 chironomid adults

♂ ±20 " "; 2 carabid adults ±50 chironomid adults (black spp).

July 31 ♂ ±30 Tipulids; 3 spiders; ?# of muscoid flies but probably not over 15

♂ ±10 Tipulids; some unidentified [illegible] of which only mandible remains looks like □ probably 50 of these. plecop

♂ ±5 Chrysomela subsulcata adults; ?# of spiders; remainder of gop not identifiable but could be larva of Chrysomela & also muscoid flies.

♂ ?# of chironomid (green sp) adults probably ±50 but can't be certain; ?#±20 Chrysomela larvae ±5 spiders rest of gop not identifiable

♂ ±100 or even more adult Trichops like those you've been observing on arctophila filled pools

♂ ±150 adult Trichops; remains of probably 3 chrysomela adults

♂ ±5 chrysomela subsulcata adult; ±15 muscoid flies; ±50 Tricops

♂ ±200 Trichoptera adults; ±5 muscoids 1 chrysomela subsulcata AL

Hurd
1952

Pt. Barrow, Alaska

July 31 — Red Phalarope - crops

♂ ±200 Trichoptera adults
♂ ±250 " " ; ±15 midges
♂ ±250 " " ; several midges pupa
♂ ±300 " " ; 1 spider; ±10 " " "
♂ ±200 " " ; ±10 midges " "

August 3(1)

Juv ±30 Trichoptera like those collected in arctophila p—
Juv ±50 " " " " " "
Juv ±50 " " " " " "

August 30

Juv ±300 chironomid larvae - red ones

Calcarius
lapponicus

Hurd
1953

Pt. Barrow, Alaska

Lapland Longspur stomach analyses

May 20-23

- wholly plant seeds; ±200 Luzula seeds constitutes the bulk other plant represented ±30 Eriophorum seeds.
- mostly degested but all seeds majority are Luzula in number ±100, but bulk made up of the larger Eriophorum seeds ±100.
- ±75 Eriophorum seeds intact balance of stomach contents digested.
- 4 spiders; 2 flies (Scopeuma vulpinum) ± 150 Eriophorum seeds; 27 seeds of Ranunculus pallasii. No Luzula!
- all seeds mostly digested 3 Carex aquatilis; remains of Eriophorum seeds but no way of estimating number.

May 24-25

- ±300 Eriophorum seeds.
- ±500 " " .
- mostly digested, but 15 seeds of Carex aquatilis undigested.
- ±500 Eriophorum seeds
- ±200 " " ,
- 25 Carex aquatilis seeds
- ±150 Eriophorum seeds

Hurd
1953

Pt. Barrow, Alaska

Lapland Longspur stomachs

May 29

- ±150 *Eriophorum* seeds.
- ±250 " " 1 large gray Collembola
- ±200 " " .
- ±100 " " .
- ±200 " " .
- mostly digested but largely insectan fragments of adult + *Chrysomela subsulcata* present 2 larvae of same 5 staphylinid adult; seeds (30) of ______ ______.
- ±300 seeds of *Eriophorum*
- ±100 *Eriophorum* seeds; ±50 *Luzula* seeds.
- ±150 " " ; 22 " "
- 10 seeds of Eriophorum; contents largely insectan mostly carabids (adults) and a few staphs; 2 pupae of some muscid and 1 tipulid larvae. difficult to count the number owing to smashed up condition.
- ±75 *Eriophorum* seeds; 11 Luzula seeds rest of contents macerated seeds.
- ±150 Luzula seeds; 3 *Eriophorum* seeds.
- ±100 *Eriophorum* seeds.
- ±50 " " ; balance + less than ½ of stomach contents are insect fragments mostly appear to be carabid + Staph adults; 3 large gray Collembola.

Hurd
1953

Pt. Barrow, Alaska

Lapland Longspur stomachs.

May 29

- ±75 *Carex aquatilis* seeds:

June 1

- 7 spiders; 3 *chrysomela* larvae; ±50 seeds of *Eriophorum*; ±100 seeds of *Luzula*
- ±200 seeds of *Potentilla emarginata*
- mostly insects + probably all carabid adults judging by 2 specimens of adults present 21 seeds of *Luzula* and 5 *Eriophorum*.
- ±100 chironomid larvae - small grayish larvae.
- remains of 5 adult *Chrysomela subsulcata* ±50 seeds of *Luzula*.
- ±125 seeds of *Potentilla*; 12 seeds of *Luzula*
- ±50 seeds of *Luzula* ±25 large gray collembola
- ±100 chironomid larvae small grayish larvae.
- 15 seeds of *Eriophorum*; many digested insect parts but can't be identified.

June 4

- 5 Muscoid pupae; 7 spiders; 3 adult *Chrysomela subsulcata* pupae 23 seeds *Luzula*.

Hurd
1953

Pt. Barrow, Alaska

Lapland Longspur stomachs.

June 4

- 3 muscoid fly pupae; 1 chrysomela sp. sulcata
  30 seeds of Potentilla emarginata: 3 spiders
- completely digested but obviously plant matter, probably seeds of Eriophorum
- ±100 seeds Eriophorum; seeds of Luzula ±20. other materials (insect?) ground up.

June 5

- 37 chironomid larvae

May 27

- ±150 Eriophorum seeds; 1 spider; ±50 chironomid larvae.

June 8

- 2 Tipulid larvae; 5 chrysomela adults
  1 muscoid pupae
- 2 muscoid pupae (large); 2 chrysomela adults
- 31 Luzula seeds; 2 chrysomela larvae
  3 chrysomela pupae; remains of at least 2 adult chrysomela.
- 15-20 spiders; 1 chrysomela adult
  6 Eriophorum seeds.
- 7 chrysomela adults; 3 Luzula seeds
- 2 large muscoid pupae; 3 Tipulid larvae; 4 chrysomela adults
- 2 chrysomela adults; 17 Luzula seeds

Head
1953

H. Barrow, Alaska

Lapland Longspur analyses

June 9

- ± 30 Eriophorum seeds; 2 or 3 *Chrysomela* adults
- mostly digested, but remains of chrysomela adults discernible.

June 9
Lake Ikroavik

- ?# of calliphorid pupae - less than 10
1 *chrysomela* ~~pupae~~ larvae.
- ± 10 *chrysomela adults*; 1 carabid adult.

June 13

♀ ± 150 *Potentilla* seeds.

June 16

- 6 seeds Potentilla; 2 Luzula; rest of contents seeds but too completely digested for identification

June 20

- 1 *chrysomela* larvae; 2 *chrysomela* adults ±10 spiders.
- 3 muscoid pupae 1 chrysomela adult; ±5 spiders
- ±5 chrysomela adults; 3 spiders
- 11 muscoid pupae; 3 chrysomela adults 6 spiders
- 7 seeds of *Luzula*; 1 anthomyid adult 1 chrysomela adult; remainder insects but can't be identified

Hurd
1953

Pt. Barrow, Alaska

Lapland Longspur Stomachs

June 20 ±20 spiders; 2 chrysomela adults; 2 spider egg masses.
- ±4 chrysomela adults; 12 seeds of Eriophorum ±10 spiders.
- 1 chrysomela ~~pupae~~ larvae + 1 adult; ±5 spiders + 1 egg mass.; 6 anthomyiid pupae.
- 2 chrysomela ~~pupa~~ larvae; 4 adult chrysomela
- 1 Tipulid larva; 3 larvae of Chrysomela; 6 anthomyiid pupae; 1 adult chrysomela; 11 seeds of Luzula.

June 27
- ±50 large chironomid pupae; ±25 adults of same sp.; 5 spiders; 1 adult muscoid fly; 11 red chironomid larvae.
- ±100 chironomid adults of 2 species large one & next one in size; 1 spider
- 10 muscoid pupae; ±50 chironomid adults of 2 species.
- 1 adult of Chrysomela; ±30 chironomid adult of 2 spp.
- 3 adults of Chrysomela subsulcata 1 spider; 30 seeds of Potentilla & 5 seeds of Eriophorum; 11 midge adults of 2 spp.
- 1 adult Chrysomela; 1 pupa of muscoid ±30 chironomids of 2 spp.

[illegible]
1953

Pt. Barrow, Alaska

Lapland Longspur Stomachs

June 27

- 3 chrysomela larvae; 1 chrysomela adult; 1 carabid adult; ± 50 chiron adults of 2 spp.
- 9 seeds of Potentilla; ± 30 chironomid adults of 2 spp.
- ± 100 chironomid adults; 2 chrysomela larvae.

July 4

♂ remains of 2 muscoid pupae; 1 ichneumonid; ± 50 adult midges of several spp.

♂ ± 100 " " " " "

♂ ± 5 spiders; 10 tenthredinid adults, ± 50 midge adults of several spp. 1 anthomyiid

July 9

- ± 50 adult midges (chironomids) mostly small species
- ± 75 adult chironomids mostly small species.
- ± 25 chironomid adults almost all large species
- ± 50 chironomid adults mostly large species; 2 adult muscoid flies
- ± 75 chironomid adults mostly large species — remains of 1 muscoid pupae

Hand
1953

Pt. Barrow, Alaska

Lapland Longspur stomachs

July 9

- ± 30 small chironomid adults; 19 *Eriophorum* seeds.
- ± 50 small chironomid adults a few ± 5 large chironomid adults,
- ± 100 adult of chironomids mostly small.
- ± 75 " " " "
- ± 50 " " " "
- 1 female tipulid; ± 50 small chironomid adults.
- 1 muscoid pupae; ± 50 small chironomid adults

July 16

- 1 adult Saldid. 1 large sp ♀ Tipulid adult with eggs; 3 calliphorid pupae 1 Tenthredinid adult. 11 seeds of *Luzula*. ± 30 chironomid adults mostly large species. ~~1 ♀ Tipulid~~
- 1 ♀ Tipulid adult - large sp. ± 30 chironomids + 5 Fungivorid adults.
- ± 50 chironomids all large species; 1 ♀ Tipulid large sp.
- 1 ichneumonid adult; 2 ♀ tipulid adults; ± 20 chironomids adult.
- ± 20 chironomid adults; 2 tenthredinid adults; 7 *Luzula* seeds.

Lapland Longspur - Stomachs

July 24

- 1 chrysomela adult; 2 Tipulid adults; 1 muscoid fly; ±20 chironomid adults.
- 5 seeds *Potentilla*; 5 Tipulids 1 chrysomela; ?# of chironomid adults
- 3 Tipulids; ±50 chironomid adults
- 3 Tipulids; ±50 chironomid adults.
- 6 Tipulids.
- 1 chrysomela adult; 1 Tipulid
- 2 Tipulids
- 3 Tipulids 1 spider 1 muscoid; ±20 chironomids
- 7 Tipulids 1 spider
- 3 " 1 chrysomela adult

Aug 1

- 3 *chrysomela* larvae, 1 adult; ±15 ichneumonids 5 chironomid adults
- 3 Tipulid ♀'s judging solely by eggs. 1 spider

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1952

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Lapland Longspur – Calcarius (Stomachs)

June 18 – Chrysomelid adults (=? Chrysomela subsulcata) ± 20; ?Carabid remains 1; Ichneumonoid 1 Ad; 1 Lycosid.
– ?Chironomid larvae 7; Chrysomelid Ad (as above) 5
– ?Chironomid larvae 2; chrysomelid Ad " ±5; Lycosid 1
– chrysomelid Ad ±15; ?Chironomid larvae 6
– anthomyiid pupae 4; chironomid larvae 10; chrysomelid adult remains ?
– Carabid remains (=? Amara) ±5

June 23 –
– Empty.

June 30 ±20 spiders; 1 anthomyiid pupae ?±10 chrysomelid adult (= Chrysomela subsulcata) remains; 1 wing of tenthredinid; 3 staphylinids; note estimate of spider adults is an approximation based on leg fragments – could easily be 2× number given.

July 6
♀ about 1/5 bulk made up of seeds of following plants (probably is Dupontia fischeri NO! Wiggins reidentifies it as Phippsia algida) fragments of ±20 Ephydrids, ±150 Ectmoptera like Chironomids – these constitute about 3/5 of bulk ±10 spiders & 1 carabid adult.
♀ ±30 anthomyiid pupae; pupae? of undetermined Diptera? saved for identification – probably 50-75 in number; 1 Tipulid ±20 spiders

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1952

Pt. Barrow
Alaska

Lapland Longspurs – Calcarius

July 6

♂ ±150 small black diptera? pupae - like b. stenty, specimens saved for identification; ±15 anthomyiid adults + ±20 pupae of same; a few plant seeds (4) and remains of several ±5 staphs.

July 9

♂ 1 large tipulid; bulk consists of adult Chrysomela subsulcata ±20; remains of Ephydrids ±10; tenthredinids 3

♂ Tenthredinids ±16; spiders ±15; Ephydrids ±25.

♀ 53 seeds of (Luzula confusa)
[illegible] ±30 Ephydrid adult larvae; ±10 staphylinids; ±15 spiders

♀ ±20 Chrysomela subsulcata adults; ±5 spiders.

July 19

LLE ♂ ±50 Tipulids adults; 7 Luzula seeds

" ♂ ±20 " " ; 3 "

" ♂ Fledging ±10 Muscoid (gray ones) flies; ±5 Tipulids ±20 midges; 1 chrysomelid larva.

July 25

♂ ?# of Tipulid adults of vestigial wing type only eggs present; ±4 Chrysomela subsulcata Adults 21 seeds of Luzula sp. confusa.

♂ ?# of Tipulid adults (see above); ±3 Chrysomela subsulcata Adults; 17 seeds of Luzula confusa

HURD
1952

Pt. Barrow, Alaska

Lapland Longspur - Calcarius

July 25
♀ ?# of Chrysomelid subsulcata adults; ?# of Tipulid adults (see foregoing entries); 27 seeds of Luzula confusa
♀ Essentially as above except more 36 Luzula confusa seeds
♀ as above 23 Luzula confusa seeds
♀ as above + wings of adult muscoid flies ±5; no seeds.
JUV as preceding ones but no seeds.
July 29
♂ JUV Chrysomela subsulcata Adults ±6; 1 Ichneumoid ±10 Chironomids. ±10 Muscoid flies. 7 Luzula confusa seeds
♂ Ad 1 larva of Chrysomela subsulcata; ±15 Muscoid flies 23 seeds of ________
11 Collembola.
August 1 1 Tipulid; 8 Chrysomela subsulcata larvae
Ad ♂ 1 adult of same beetle 1 mosquito ♀. ±10 midges (chironomids) ±5 muscoid flies; 3 ichneumons; 7 seeds Luzula confusa.
J ♂ ±3 Chrysomela subsulcata adults; ±20 muscoid flies; ±5 ichneumonids; ?# of Chironomid adults; several green seed buds of Ranunculus probably nivalis.
J ♀ 2 Tipulids; ±4 Chrysomela subsulcata adults; #? of larvae of same but less than 4 ±30 muscoid flies, 1 ichneumonid; 11 seeds of Luzula confusa

near Walrussing Pass

Hund
1952

Pt. Barrow, Alaska

August 1 Calcarius

J 2 green lepidopterous larvae: 5 Chrysomela subsulcata larvae ±20 muscoid flies 3 ichneumonid adults.

J ±20 Muscoid flies; 3 Chrysomela subsulcata; 3 ichneumonid adults. a few less than 10 seeds

J Fragments of about 3 Adults of Chrysomela subsulcata remainder primarily young seeds. Too early for specific identification but look like Luzula!! Ranunculus

J 1 Tipulid; ± 8 chrysomela subsulcata adults ±?40 muscoid flies.

J ±10 adult Chrysomela subsulcata ±25 Muscoid flies; Tipulid eggs ±15; 5 seeds of Luzula confusa

August 13 = average wt of contents (wet) = ±2 gms great increase in pebble content

J 2 green lepidoptera larvae, ±100 seeds of Luzula

J 1 Ichneumonidae, ±75 seeds of Luzula ; 1 adult Chrysomela larva

J ±100 seeds of Luzula.
2 green lepidoptera larvae

J ±75 seeds ( ) of ~~Eriophorum~~ Potentilla emarginata ; ±20 seeds of Luzula
No see journal for VIII-25

J all seeds + almost completely digested but are apparently like = ~~Eriophorum~~ Potentilla emarginata No Ranunculus see journal VIII-25

J ±100 seeds of Luzula.

J ±75 seeds of Luzula ; ±5 chrysomela subsulcata adults

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1952

Pt. Barrow, Alaska

Calcarius

August 13

J ±50 seeds of *Luzula* ; 1 muscoid pupa

J ±100 seeds of *Luzula* ; ±10 muscoid pupae; 1 chrysomela larva

J 26 seeds of (●) = *Eriophorum*

J ±100 " " " = "

J ±75 seeds of *Luzula*

Ad ±10 *Chrysomela* *subsulcata* adults; ±30 seeds of Luzula

Ad ±7 Chrysomela subsulcata adults; ±50 seeds of (●) = *Eriophorum*

J digested,

J 3 chrysomela larvae; 17 seeds of ?

J ±100 seeds of *Luzula*

August 30

8J. ±3 Tipulid pupae. seeds constituting about 1/2 bulk are probably *Stellaria*.

Hurd, P.

1952 - 1953

Alaska

Species Accounts: 1953
[incl. stomach contents]

Hurf
1953

Pt. Barrow, Alaska

Snow Bunting stomach analyses

<u>May 18-21</u>

- 14 seeds of <u>Arctophila fulva</u> remainder beyond identification but certainly is plant.
- ±100 seeds of <u>Luzula</u>
- ±200 " "
- 37 seeds of <u>Arctophila fulva</u>.
- completely digested.
- ±150 <u>Luzula</u> seeds
- completely digested.
- empty.
- completely digested, but appears to have been seeds.

<u>May 23-26</u>

- ±50 seeds of <u>Arctophila fulva</u>.
- ±200 seeds of <u>Eriophorum</u>.
- 2 muscoid pupae; 10 small grayish chironomids ±25 seeds of <u>Luzula</u>.
- ±75 seeds of <u>Eriophorum</u>.
- ±150 seeds of ".
- ±200 " " ". ±50 seeds <u>Luzula</u>
- ±100 seeds of <u>Arctophila fulva</u>.
- ±75 seeds of <u>Eriophorum</u>.
- completely digested, but obviously seed origin.
- ±100 seeds of <u>Eriophorum</u>; ±200 seeds of <u>Ranunculus</u> ±50 seeds of <u>Luzula</u>
- completely digested.
- mostly digested but obviously contains <u>Eriophorum</u> remains.

Hurd
1953

Pt. Barrow, Alaska

Snow Bunting stomachs

May 29

- ±100 Eriophorum seeds.
- ±100 " " .
- ±200 " " .
- ±150 " " .

June 1

- empty.
- ±100 eriophorum seeds; 2 curculid adults.
- 3 spiders; ±200 Eriophorum seeds
- ±100 Eriophorum seeds; 17 Luzula seeds
- digested but evidently bulk was Eriophorum seeds
- "
- ±200 eriophorum seeds.

June 4

- ±300 Eriophorum seeds.
- ±250 " " .
- empty.
- ±300 seeds of Eriophorum
- digested but Eriophorum seed remains are evident.

June 7

shot at Nuwuk ↓

- digested - evidently plant
- ±75 cochlearca seeds.
- ±100 Eriophorum seeds
- ±100 cochleara seeds; 22 Eriophorum
- ±75 chironomid larvae. no plant matter. saved for identification

Hurd
1953

Pt. Barrow, Alaska

Snow Bunting Stomach Analyses

June 7
— ±100 *Potentilla* seeds.

May 27
— digested but evidently plant seeds

June 8
— digested.

June 13
— ♀ ±50 seeds of *Potentilla*
— digested
— 4 carabid larvae; 11 seeds of *Luzula*
— empty.

June 15
— 31 small chironomid larvae; 2 seeds of *Potentilla*
— ±50 small chironomid larvae; 5 seeds of *Potentilla*
— 27 small chironomid larvae.

June 16
— 1 Saldid nymph; 1 large sp. of staph
3 muscoid pupae; ±50 small chironomid larvae; 2 small tipulid larvae.

June 20
16 seeds of *Luzula*; 5 of *Potentilla*.
? # of *Chrysomela* adults but not more than 3.

Hurd
1953

Pt. Barrow, Alaska

Snow Bunting stomachs

June 27

- ±5 large chironomid adults (large ones); calyx of Ranunculus nivalis; 3 immature Saldids; 1 adult Chrysomela; 1 ad Carabid.
- ±25 adult midges (large ones); 2 Adults of Chrysomela subsulcata; 3 seeds of Luzula; 11 seeds of Eriophorum.

July 9

- ±50 small chironomid adults; 15 Eriophorum seeds.

July 24

- ±50 chironomid adults; 1 tipulid 2 spiders
- 2 tipulids ±75 chironomid adults 1 ichneumonid
- 1 Tipulid; rest of contents macerated beyond identification but appear to be chironomid adults
- 3 Tipulids; ±100 " "
- 6 Tipulids; ±20 chironomid adults

July 26

- ?# of chironomid adults.
- ±50 " " ; 1 spider
- digested

Hurd
1933

Pt. Barrow, Alaska

Stomach – Snow Bunting

July 26

– ± 50 chironomid adults; 5 chironomid larvae
– ± 20 chironomid larvae; ± 50 chironomid adults.

Hurd
1952

Pt. Barrow, Alaska

June 18 Snow Bunting Plectrophenax (51 nacks)

- Chironomid larvae 4; seeds ±10 ? *carex aquatilis* and a few sprigs of green.
- Tipulid-like larvae 7; vegetable matter mostly seeds; bulk of crop contains small irregular pebbles; difficult to estimate ratio of animal : vegetable matter.

June 25

♂ anthomyid pupae – like those in meta plots containing sphagnum moss; 20 ? Chironomid larvae like those under driftwood; no vegetable matter

♂ anthomyid pupae ±10; 15 ? Chironomid larvae ≈ those under driftwood; no veg. matter

♀ Anthomyid; larvae-prepupae 12; pupae 66 Chironomid larvae 8; seeds 2 (all preceding from esophagus + saved) The stomach contains ± 75 prepupae + pupae of anthomyids, ± 20 larvae of same; ± 20 chironomid larvae; no seeds.

♀ anthomyids: remains of probably 100 pupae + an indeterminable ? ± 20 chironomid larvae; 10 seeds of *carex aquatilis*.

♀ 36 *Carex aquatilis* seeds; 23 chironomid larvae; 27 discernible preadult Tenthredinids; 4 lycosid spiders = all preceding from esophagus #156 4 F.A. Pitelka near the Shack on old Pt. Barrow. Stomach has mostly pupal remains of anthomyids probably ± 75; ±10 carex seeds; a few spider legs; nothing else identifiable.

Hand
1952

Pt. Barrow, Alaska

June 25. Snow Bunting Plectrophenax (Stomachs)
♀ contents primarily insectan but too far digested to ascertain composition

June 29
♂ Fragments of Chrysomelid (= Chrysomela subsulcata) very numerous in stomach and I should judge that they probably constitute ±20 Adult beetles; 2 large dipterous larvae similar to one taken out of birds beak + is being reared for identification
Tipulid VII-6-52
purposes; seeds 28 in number of a grass? (= Luzula sp. (det Wiggins) present and constitute less than the volume of 1 Ad chrysomelid beetle.

July 6
♀ in mouth 1 spider + 1 tipulid pupa with remains of adult having been forced out. Esophagus empty, stomach - on basis on field observations q.v. she fed in 2 places willow mound for Tenthredinids ±10 Ichneumonids ±5; other place shore of Lagoon getting Eretmoptera-like Chironomids ± 150, Carabid Adults 3. Evidently mouth contents were picked up in pool edge S. west of pitcher nest during no disturbing activity.
♂ ±50 Tenthredinid adults; ±10 Ichneumonids; ±20 spiders some green seeds ±10 which
July 8 Dr Wiggins informs me are really buds + not seeds
♂ Trapped bird in grid - only commercial bird seed

Hurd
1952

Pt. Barrow, Alaska

August 30 — Plectrophenax crop analyses

Birds on this page were shot at Nuwuk

- Ranunculus nivalis seeds ± 200; Cochlearia seeds ± 500 (these are now without the green surrounding capsule, i.e. o instead of
- as above but with Luzula seeds ± 150
- sample saved for identification = ± 200 seeds of probably Ranunculus or possibly Potentilla
- digested but evidently all vegetable
- ± 50 Ranunculus nivalis seeds; ± 500 seeds of Cochlearia and ± 50 seeds of Ranunculus or possibly Potentilla
- ± 100 seeds of Potentilla; ± 200 seeds of Stellaria
- ± 400 seeds of Cochlearia; ± 300 seeds of Ranunculus nivalis; ± 50 seeds of Luzula
- ± 500 seeds of Ranunculus nivalis
- mostly digested, but seeds of Ranunculus & cochlearia evident

Hurd
1953

Pt. Barrow, Alaska

Miscellaneous Bird Stomachs

June 23

Rose Gull

♂ 41 distinct red chironomid larvae other chironomid (red) remains, but too far digested to estimate number

♂ 4 late pupae of chironomids (red) contain fully formed adults & ±200 red chironomid larvae.

June 27

Dowitcher

— 32 very large tipulid larvae; 6 smaller tipulid larvae of different species.

— 27 very large tipulid larvae; 3 of smaller species; 3 dytiscid adults.

July 8

♀ Steller Eider crop only

389 red chironomid larvae. 3 caddis fly cases; 5 Dytiscid adults; 3 small tipulid larvae.

July 30 ~~Rough winged~~ Bank Swallow

±50 large black chironomids there may be some additional smaller ones but can't be demonstrated

Hurd
1953

Pt. Barrow, Alaska

Miscellaneous Barrow Bird stomach analyses

June 10 Golden Plover: (Wiggins coll. No. 603) June 9
wt of bird 145.4 gms. ♂
43 large tipulid larvae; 6 medium-sized white tipulid larvae. 6 carabid adults.

June 16 Steller Eider
Crop had 307 large red chironomid larvae + 1 small tipulid larvae
Gizzard had ± 400 red chironomid larvae

June 19 Red Phalarope stomachs
- 1 very large tipulid larvae; 41 chironomid larvae (red)
- 4 very large tipulid larvae; 21 red chironomid larvae;
- ± 20 spiders; 16 red chironomid larvae;
- 3 carabid adults; 11 chironomid larvae.
- 1 chironomid pupae; ± 50 copepods rest digested beyond identification.
- ± 100 red chironomid larvae.
- ± 100 copepods; 3 spiders
- ± 100 copepods; 1 red chironomid larvae.
- ± 50 red chironomid larvae; ? # of carabid adults.
- ± 100 red chironomid larvae; 2 spiders

8899 H.